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Maxfield Parrish

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THE SPIRIT OF TRANSPORTATION

TO express the spirit as well as the material development of truck transportation is the aim of this new COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE. It will provide information in greater detail than ever before concerning the many truck products in which dealers and operators share an absorbing interest. It will convey to its readers a maximum of practical, useful information regarding truck operation and maintenance. It will portray the achievements of truck transportation and keep step with it along trails yet to be broken.

*The Commercial Car Journal
and Operation & Maintenance*

January, 1929

MAKERS SEE BIG

Truck Factory Execu
old of a Most Promis
Registrations, and
Totals in

By George



be "good" and "very good." Truck makers whose opinions were solicited were divided in their predictions, two of them seeing an "excellent" truck business year to ever one that viewed the outlook as "good."

"In my opinion," said T. R. Lipard, president of the Stewart Motor Corp., "the motor truck industry is entering 1929 with a better outlook and on a better basis than at any time since its inception."

"For distributors and dealers the merchandising of motor trucks is now on a better basis than ever."

1928 Truck Registrations

Truck registrations by states as of Jan. 1, 1928, according to the annual census compiled by Automotive Industries:

State	Total Registration	% Gain	% Loss
Ala.	36,238	13.6	
Ariz.	7,710		25.9
Ark.	36,626	14.3	
Calif.	220,034	2.8	
Colo.	18,995		14.8
Conn.	48,029	10.1	
Del.	1,051	15.9	
D. C.	15,711	7.7	
Fla.	51,802		16.4
Ga.	40,215	5.9	
Ida.	11,657	11.0	
Ill.	190,000	2.9	
Ind.	120,500	3.7	
Iowa	60,955		5.0
Kan.	55,000	0.7	
Ky.	31,743	6.8	
La.	40,000	2.6	
Me.	28,212		6.1
Md.	8,177		30.2
Mass.	85,068	3.9	
Mich.	165,367	5.7	
Minn.	88,805	9.3	
Miss.	31,132	37.1	
Mo.	72,000	0.8	
Mont.	21,969	22.0	
Neb.	28,069		10.6
Nev.	5,549	3.5	
N. H.	14,048	17.0	
N. J.	129,046	2.5	
N. M.	2,463		38.4
N. Y.	333,755	3.7	
N. C.	44,000	12.6	
N. D.	21,700	36.8	
Ohio	202,000	2.1	
Okla.	57,783	2.4	
Ore.	21,981	4.7	
Pa.	221,884	3.4	
R. I.	14,381		26.2
S. C.	23,000	14.6	
S. D.	20,025	21.1	
Tenn.	27,560	7.9	
Texas	151,634	32.4	
Utah	14,321	27.3	
Va.	54,000	10.3	
Vt.	7,575	21.9	
Wash.	57,875		0.07
W. Va.	35,936	15.4	
Wis.	97,083	9.7	
Wyo.	7,398	15.3	
Total	3,091,062	5.07	

HAVING turned their backs on the greatest production and export year in truck history, a year in which domestic sales also surpassed 1927 but fell somewhat short of the 1926 high mark, truck manufacturers and dealers have entered upon the new year with favorable indications that in 1929 new records will be established in production, in exports and in sales.

The year just ended, according to estimates, saw a 5 per cent gain in United States truck registrations (see Fig. 1); an 11 per cent gain in production over the previous record year; an increase of approximately 50 per cent in exports and foreign assemblies over the 1927 record of 102,000, and a gain of 3.9 per cent in domestic new-truck sales over 1927 (See Fig. 2).

In regard to 1929, one of the most encouraging signs of truck industry prosperity is the optimistic conviction of manufacturers and dealers alike that the outlook for good business never was better. Dealers responding to a request for their views were, with negligible exceptions, positive in their expressions that business this year will

BUSINESS IN 1929

tives Say Industry is at Threshing Year. 1928 Shows Gain in Highest Production and Export Truck History

T. Hook

Most manufacturers now freely acknowledge that through the distributor or dealer is the economic method of merchandising trucks. In other words, the trend is away from branches and back to the distributor and dealer. Further, manufacturers are now insisting that their branch managers must show a profit. This alone has done more than anything else to improve truck merchandising methods, especially in the matter of curtailing excessive terms, selling to irresponsible buyers and excessive allowances for trade-ins.

"Nineteen hundred twenty-eight saw the general adoption of six-cylinder engines, four-wheel brakes, pneumatic tires and many accessories as standard equipment on light and medium duty trucks. I am confident that 1929 will see the general adoption of six-cylinder engines and four-wheel brakes on heavy duty trucks, as well as a great improvement being made in appearance."

An "extremely promising outlook for 1929" was seen by O. W. Hayes, president of the Republic Truck Sales Corp., before his untimely death.

"The truck business," according to Mr. Hayes, "has been expanding steadily over a long period of years, and in the face of nationally prosperous business conditions there is every reason to believe that this increase will continue through 1929. The purchasing power of the farmer is steadily growing and with this bettering of the farmer's condition, he will be in the truck market in greater force than ever before. In the foreign field I look for the biggest year in the history of the truck industry."

The expansion of the truck market has been carefully noted by the Willys-Overland organization, which is making plans to take full advantage of opportunities. It is the expectation of John N. Willys, president of Willys-Overland, Inc., that the finish of 1929 will see Willys-Overland one of the largest producers of commercial units in the United States. In the distribution of its output 6000 retail outlets will participate.

"Our investigations have proved conclusively that motor trucks are more closely affiliated with the every-day life of the American people than ever before," said Mr. Willys. "Practically all

A. J. Brosseau, Vice-President, Truck Division, National Automobile Chamber of Commerce:

"Because of the efficiency of the truck and its growing field of operation, truck produc-

tion in 1928 has set a new record, which will be repeated in 1929.

"Low cost and expedited movement of materials and supplies by motor truck have contributed very largely to the industrial and business development and prosperity of America. Motor truck use is now indispensable to business progress.

"Rapid expansion in the building of hard surfaced highways is making available economical and convenient transportation by truck to industries and communities hitherto denied its full benefits. The construction of more highways not only promotes truck use, but enlarges the market for trucks, which will be an important factor in 1929.

"Style appeal, which is now of major importance in selling automobiles, is now invading the light truck field. Delivery wagons, in particular, are now being designed for advertising and prestige purposes with lines and colors almost rivaling the passenger car's appeal to the sense of smartness and beauty.

"Except for the heaviest types of hauling, largely within city limits, the trend toward speedier vehicles and pneumatic tires has been marked during 1928 and will continue so during 1929. Truck manufacturers have been quick to recognize, with the predicament of the trolley industry as a glaring example, the unwisdom of clogging the flow of modern highway traffic with vehicles not adjusted and geared up to move with it.

"A better understanding of highway transport and its adoption by rail executives accounts, to some extent, for a more reasonable attitude with respect to legislation in the states and at Washington. This new attitude will, no doubt, result in legislation designed to encourage, rather than curb, highway transport."

basic industries have been affected in recent years by motor truck operation. New uses are being found for motor trucks every day. I have no doubt in my mind that next year there will be a greater use of utility motor vehicles than ever before.

In fact, I think we are only at the inception of this great division of the automobile industry.

"Naturally we are again increasing the quantity of our commercial passenger car models and are adding two more standard commercial cars to our list of models available for this market."

"Nineteen twenty-nine is an opportunity year," in the opinion of Carl Parker, assistant sales manager of the Reo Motor Car Co.

(Turn to page 54, please)

Year	U. S. & Canada Production	U. S. Production	U. S. Truck Sales	U. S. Exports & Foreign Assemblies	Increase in U. S. Dealer Stocks
1926	529,393	490,049	387,362	68,174	34,513
1927	487,422	455,195	327,939	102,000	25,256
1928*	590,000	540,000	340,000	152,000	48,000

* 1929 totals estimated.

The estimated total production of trucks in the United States and Canada for 1929 is 635,000, a figure which, it is believed, will be 5 per cent above or below the actual. The same percentage of variation will obtain in the following estimates for 1929: U. S. Truck Production, 575,000; U. S. Domestic Sales to Dealers, 375,000; U. S. Exports, Including Foreign Assemblies, 200,000.

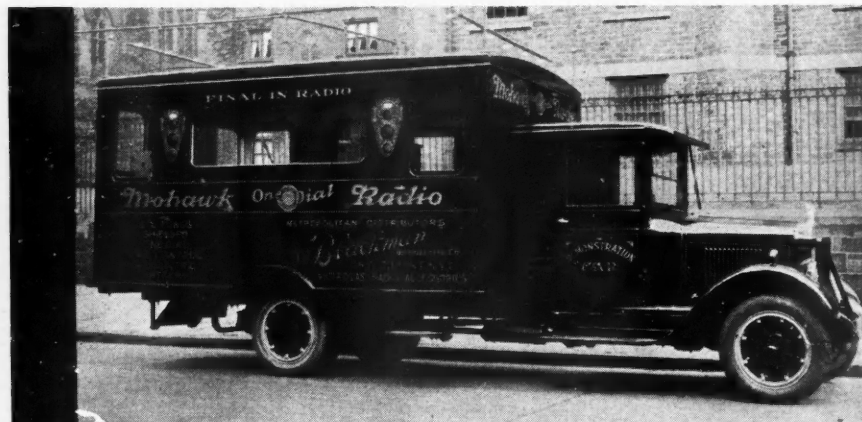
BODY BUILDERS MEET

Mohawk Radio Demonstrator

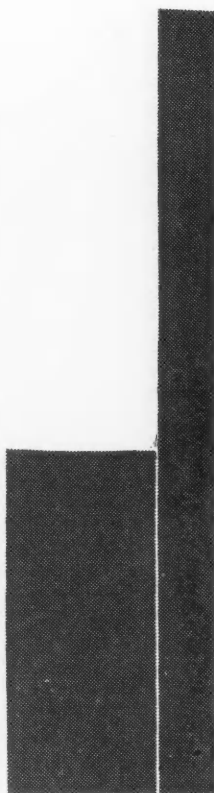
A DEMONSTRATING room on wheels (Fig. 1) solved the merchandising problem of the Blackman Distributing Co. of New York, distributor of Mohawk radios. The management conceived the idea of bringing the showroom to the retailer and of making on-the-spot demonstrations. The Mohawk demonstrating car was the result and the owner found that the busy dealers invariably found a minute or two to step into the car and listen to music coming over any of the five sets on exhibit. It was a success; the dealers bought.

The body, mounted on a Model A Autocar, was designed and built by Albert Brothers, 11 Cannon St., New York City, but finished on the inside by the Blackman company's own cabinet makers. It is 14 ft. long, 7 ft. wide and 6½ ft. high. The cab is specially designed and does not communicate with the body. Frame work of the body is oak, with iron braces at all posts and joints. The exterior is faced with Plymetl panels screwed to uprights or stanchions mounted at 14-in. intervals.

One-half inch veneer boards with moldings at all joints are used to line the interior walls, while tongue and grooved basswood slats are used in the ceiling. The floor is of oak covered with linoleum. Three dome-lights mounted in the ceiling provide illumination for night demonstrations. Radio cabinets are lined up on each wall, securely fastened to both the floor and walls. The aerial is mounted on the roof and consists of four uprights firmly fastened to each corner and a six-section line running longitudinal with the body.



January, 1929



All-Metal Van Body

THE Lang Body Co., Cleveland, production all-metal van body (Figs. 5 and 6), provides a 1000 cu. ft. compartment. It weighs 5260 lb.

The body is all of metal except the roof and floor, which are of wood, and the sign panels, which are of ¾-in. Haskelite. The roof is sheathed with 5/16-in. poplar, covered with canvas, and the floor is of 1½-in. pine.

The entire body frame is made of sheet steel; the pillars are pressed U-shape, the side sills are in the form of a Z, and cross-sills are channel. The rear wheel housings are of steel. The interior is lined with sheet steel up to

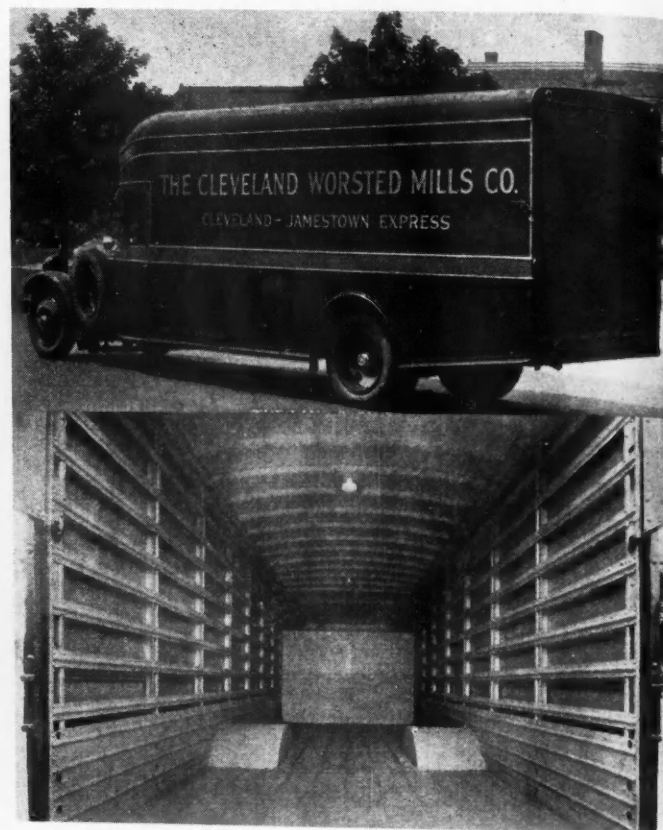


Fig. 5, Above. Showing rear body rake and doors of Lang all-metal van.

Fig. 6, Below. Entire interior of the Lang van is lined with steel

the belt line, above which is a lattice work of sheet steel strips. The roof rails and rafters are angles with inside slatting of oval pressed flat strips. The entire framework is hot riveted. Outside panels, the header, belt and lower panels are bolted to the frame, the bolt edges being covered with Lang oval type hollow moldings. A large square section of the floor between the wheel housings is removable to give access to the rear axle for repairs.

The lower side panels are extended below the floor line to a point in line with the wheel hubs. The rake of the lower edge of the body from rear wheels to the end of the body is an unusual feature as well as the running board that skirts the entire length of the sides.

Entrance to the driver's compartment is through two full-length doors, which, when closed, conceal the steps. The depth of the cab corresponds with the width of the doors. The section over the cab ceiling is part of the main storage compartment.

Fig. 1. Mohawk brings the showroom to the retailer

SPECIALIZED NEEDS

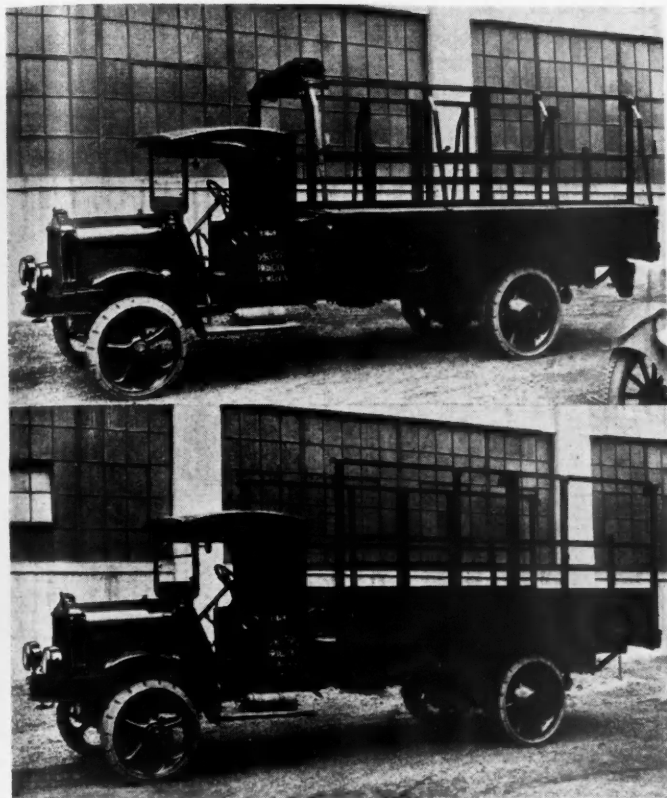


Fig. 4, Above. Public Service converts its body from rack to construction by moving racks inward

Fig. 3, Below. Public Service convertible body arranged as a rack body.

A Stream-Lined Van

H KAISER & CO., INC., Twenty-third and Race Streets, Philadelphia, recently brought out a van body (Fig. 2) designed to give the impression of lowness and length. It is 7 ft. high, 7 ft. wide and 18 ft. long, giving approximately 900 cu. ft. of loading space. Streamline effect is obtained by integral construction of the cowl and windshield and the extension of the side panels below the floor line.

No windows are in the driver's compartment as the seat is placed well forward. Entrance to the cab is obtained by a step just inside of the doors and on line with the bottom edge of the side panels. On each side of the windshield, which is surmounted by a substantial visor, adjustable side ventilators are provided. They are much like small-size windows, and also serve as pillars between windshield and doors.

Access to the rear is through two full-height doors which swing back 180

deg. They are hung on hinges of special construction, which permit this swing and at the same time conceal a great part of the hardware.

Three-Purpose Utility Body

A CONVERTIBLE body (Figs. 3 and 4) which makes it possible to adapt a truck for use in any one of three different services is employed in the fleet of the Public Service Electric & Gas Co., Newark, N. J.

The three services for which the fleet supplies trucks are gas, electric and construction. Each group has a number of trucks assigned for permanent

IN the experience of every salesman there comes a time when he is called upon to make body recommendations to meet special vocational needs. These pages will carry articles showing how certain transportation problems have been solved by use of special bodies and are presented to be of assistance in this connection. This review will also benefit operators, as it will show how other operators are meeting their transportation problems.

service. However, due to variation in the demand for trucks by each of the groups and the need of providing spares for use while units are being overhauled, it is necessary to have trucks to assign to each service as may be required.

Body requirements of the three services seemingly made it necessary to have separate spare trucks for each. The three types of body in use are: Platform, rack and line construction. The manner in which one body is converted to meet these contrasting needs is shown in the photographs. A power winch is mounted in the rear. This body has a row of holes on either side at the edge in which racks are slipped as shown in Fig. 4. The change to line construction is accomplished by moving the racks into another row of holes, about on a line with the side of the cab. Side boxes and braces are then placed outside the racks, suitable projections on the boxes and braces engaging with the outside row of holes.



Fig. 2. Integral cowl and windshield and low panels are used to obtain streamlining

SHOULD TRUCKS

Inquiry Among Truck Dealer Executives in 10 Key Cities Reveals a Feeling in Favor of Field Demonstrations

SHOULD truck dealers give field demonstrations to prospects or not?

Seeking a referendum on the question **COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE** solicited the views of 21 truck dealer executives in 10 key cities of the country: Omaha, Neb.; Milwaukee, Wis.; Youngstown, Ohio; Buffalo, N. Y.; San Antonio, Tex.; Birmingham, Ala.; Phoenix, Ariz.; Colorado Springs, Colo.; Oakland, Calif., and Seattle, Wash. The result was a two-to-one verdict in favor of demonstrations.

However, even among the proponents of field demonstrations, there exists a pronounced feeling that such demonstrations should be held to the absolute minimum and even then given only after a careful appraisal of the prospect. One of the arguments most frequently advanced against field demonstrations is that prospective purchasers too often take advantage of the truck dealer to have some work done for nothing. Experience, according to the returns, does not bear out this contention. The truck executives, whose views are given below, hold that, in fact, the demonstration practice is but very slightly abused by prospects, and that when the dealer is actually duped he has only himself to blame for not properly estimating his prospect.

"Trucks most certainly should be demonstrated," in the opinion of R. W. Leach, vice-president and treasurer of the Curtis Auto Co., Reo dealer in Milwaukee and Wisconsin distributor. "Radios, washing machines, passenger cars and what not are demonstrated, so why shouldn't the truck? A truck salesman can talk himself out, and show blueprints and illustrations to the prospect, but this method is not worth nearly as much as taking the truck out and showing what it can do. Never has a prospective truck buyer imposed upon me. The dealer must take a gamble in demonstrating the truck. It is part of the business. If you think you have a truck that the prospect can use, take it out and show him."

C. C. Morgan, manager, Mack International Motor Truck Corp. branch in Milwaukee: "Demonstrations should be given. This does not hold entirely, however, for the established lines of trucks because there exists sufficient proof as to what they can accomplish. On new lines, however, demonstrations ought to be given, but not promiscuously. The truck seller must give demonstrations as part of his business, and usually he can tell whether a prospect intends to impose upon him. Most prospects do not resort to impositions."

C. E. Anderson, sales manager, General Motors Truck Co., Birmingham, Ala.: "We believe in demonstrating with discretion, with care and a thorough knowledge of the prospect in hand. The personal opinion of the sales manager concerning the prospect would here be the deciding factor. We realize the danger of having the customer take advantage of us, but as a rule the sales manager knows his prospects well enough to know whom he can trust with a demonstration privilege and whom he should be wary of."

S. A. Stephens, president, S. A. Stephens, Inc., Dodge - Graham dealer, Buffalo, N. Y.: "We never encourage demonstrations but I think we give them in one sale out of 20. We



are always willing to give them but rarely offer them. By demonstrations I mean doing a specific piece of work for a prospect. We are rarely imposed upon in requests for demonstrations and sometimes they do make possible sales. We keep one 1-ton demonstrator truck in service at all times, demonstrating our half-ton, ton, and ton-and-a-half models. Two others are available. There is probably more loss and damage in demonstrations from abuse by

S BE DEMONSTRATED?



salesmen than from abuse by customers."

A. W. Marksheffel, president, Marksheffel Motor Co., Dodge-Graham dealer, Colorado Springs, Colo.: "A truck should be demonstrated if the customer wants it, but we never offer to and we get out of it if we can. Most truck users know what a truck can do, especially if it is a make with a national reputation."

Fred Lamping, president, Lamping Motor Car Co., Reo dealer; R. A. Sweet, general manager, General Motors Truck Co. branch, and T. H. Kirksey, in charge of truck sales, C. H. Wells, Inc., Chevrolet dealer, all of Seattle, Wash.: These three executives agreed that "demonstrations are a legitimate and effective sales tool, providing the

prospect is sufficiently interested to be open-minded and receptive to it." Mr. Kirksey made the observation that the big fleet operator invariably purchases without demonstration, while the small operator, with one or a few trucks, usually has to be shown.

J. T. Jenkins, manager of truck department, Oakland, Calif., branch of J. E. French Co., Dodge-Graham dealer: "We stand ready to and do demonstrate our trucks to the limit, as deemed advisable. We should not think of letting a failure to do any amount of demonstrating stand in the way of a sale. We give the buyer every reasonable demonstration of the work he expects the truck to perform. No piece of merchandise is so perfect that it does not have to be shown in some form or

other to convince the buyer of its worth. In scarcely more than 1 per cent of our cases is any demonstration required beyond driving around the block in an empty truck and climbing a couple of hills. Under no circumstances would we take a truck to a man's place of business and tell him to use it a couple of days in his work, as one or more truck concerns advertise doing. We consider that beyond the limits of reason and very poor business. In the event it is necessary for us to go to unusual lengths in demonstrating, we exact an agreement from the prospective customer that if our truck accomplishes the things we claim for it, he will make the purchase."

T. E. Swain, manager, Reo Motor Car Co. of California, Oakland, Calif.:

"I do not believe there can be any set rule in the matter of demonstrating. If the salesman analyses the customer's needs and shows him the proper use of the truck, and if the customer does not agree with him, having been used to doing it the way his father before him did it, then the salesman must demonstrate. Certainly I do not believe we should lend a man a truck and do two or three days' hauling for him. Our practice is, if necessary, to haul for a prospect one capacity load, and after that we conveniently have an appointment for the truck elsewhere, and we at once get right down to business."

R. E. Davis, secretary and general manager, O'Brien-Davis Auto Co., Dodge-Graham dealer, Omaha, Neb.: "We don't demonstrate any more than we have to, but sometimes we must demonstrate. However, we hold down the trip. If the prospect insists upon a demonstration that is to last all day, we give him to understand that the charge is 20 cents a mile for this. Not often is the demonstration idea abused by prospects."

E. F. Nygaard, manager of truck department, J. M. Oppen Co., Reo dealer, Omaha, Neb.: "The fact that a truck is well known to the public does not mean necessarily that it is well known to every individual. So demonstrations are quite necessary at times. A prospect may ask that only a short haul load be handled, or it may be that he requires a demonstration that will last all day. It is then up to us to study the prospect and proceed according to our best judgment. But before making any extended demonstration we usually try to exact a promise from the prospect that if the truck does the work well he will make the purchase. It is true that many times we have sent trucks out for a whole day and then lost the sales, but on the whole these occasions are rare."

George F. Wroten, Wroten-Hundley Motor Co., Dodge-Graham dealer, San Antonio, Tex.: "We believe in and practice thorough demonstration of the trucks that we sell. In my estimation it is the dealer's fault if he is taken advantage of by a truck prospect to the point of doing real hauling for him. The dealer must be smart enough to know when he is being taken advantage of by the prospect. On the other hand, he cannot afford to pass up an opportunity to demonstrate because dealers in competing lines are eager to demonstrate."

W. O. Strausbaugh, president, Strausbaugh Motor Co., Dodge-Graham dealer, Youngstown, Ohio: "We arrange actual hauling demonstrations upon the prospect's insistence. We do not think that the practice is subject to any abuses on the part of prospects."

Paul G. Clark, president, Paul G. Clark, Inc., Chevrolet dealer, Colorado Springs, Colo.: "We do not believe it necessary to demonstrate when the dealer handles a make which is nationally known and advertised. Our wil-

lingness to do so depends upon the individual case. I think that in cases of heavy truck sales where a good bit of money is involved, the dealer should go to any reasonable expenditure to demonstrate, particularly in cases where a prospect is anxious to see how one truck will perform against another."

H. L. Smoots, Manager, Federal Motor Truck Sales Corp., Birmingham, Ala.: "I believe it is positively unnecessary to demonstrate trucks, and it has been proven many times to my satisfaction. It used to be necessary, but it is not so any longer because customers know them for their merits without a demonstration. The amount of help that a salesman gets out of allowing a truck to go out for

The "Yes" and "No."

Truck dealer executives favor field demonstrations because:

1. It is a legitimate and effective sales tool.
2. Small operators usually demand to be shown.
3. The practice is not abused by prospects.
4. It is a part of the dealer's business.

Truck dealer executives disapprove field demonstrations because:

1. Dealers can not afford the time.
2. Public generally is familiar with truck utility.
3. Salesmen and prospects abuse practice.
4. It is a poor truck that doesn't perform satisfactorily in demonstrations.

demonstration is not sufficient to pay him for the wear and tear on the car and the fact that the customer may possibly take advantage of him. As a rule we do not demonstrate cars in this agency."

Ralph J. Rieman, general manager, Kam-Rieman Co., Inc., G.M.C. dealer, Buffalo, N. Y.: "We have cut demonstrations out entirely. The cases are few and far between in my experience when a demonstration ever helped close a sale. It's a poor truck that won't perform satisfactorily in demonstration. In the last four years I cannot recall a sale resulting from a demonstration. With extremely rare exceptions, we don't demonstrate."

Frank B. Smith, president, F. B. Smith Chevrolet Co., Youngstown, Ohio: "Our trucks are so well known that demonstra-

tions—that is, field demonstrations—seldom are necessary or desirable."

L. D. Hemmon, president, L. D. Hemmon Motors, G.M.C. dealer, Phoenix, Ariz.: "Trucks should be demonstrated *provided* it's the customer's trucks, not the dealer's, that are being subjected to the strain. A demonstration that doesn't put a test on some part of a machine, is no demonstration. All trucks are tested for ordinary strains at the factory, and the business guarantee of a recognized dealer is as good in regard to a truck as a sugar dealer's word is in regard to a pound of sugar. If a man will buy my truck, I'll give him a reasonable amount of my time to show him that it's hard to break, but I won't try to break my truck. On the other hand, if the demonstration asked for is a demonstration in handling the truck in a certain peculiar kind of work or under difficult operating conditions, I will guarantee to get him a driver who is capable of tricking a truck out of every extension of flexibility and holding its nose down to every pound of pull that there is in it. I'll get him such a man at reasonable wages, and I'll stand back of the man and the truck for a definite period of time written in over the dotted line. When I've made him that proposition, I consider that I've given him a demonstration of a truck dealer that's worth more than a demonstration of the truck would be."

H. M. Clark, secretary-treasurer and general manager, Milam Chevrolet Co., San Antonio, Texas: "We do not think it necessary to demonstrate because our trucks are so well and favorably known that we consider a thorough demonstration a waste of time. The only question is: Does the prospect want a truck in our weight class? If he does, we usually do not have much trouble in selling him."

B. H. McAhren, manager, White Truck Sales Co., Phoenix, Ariz.: "A competitor of ours made a demonstration haul of an 11-ton piece of machinery into the mountains, and the customer turned around and bought four White trucks of us. He discovered that a special gear ratio had been used in the demonstration, and he thought the other dealer was trying to bilk him. The special gearing was necessary for the special job, but the reaction of the customer was that of a child that has been shown a stuffed elephant instead of a real one. When I was younger and the truck business was not so well established as it is now, I used to say I would do any work that anyone wanted done, just to show what we could do. Now when a man asks for a demonstration, I wonder where he has been for the past 10 years. There's nothing more to demonstrate."

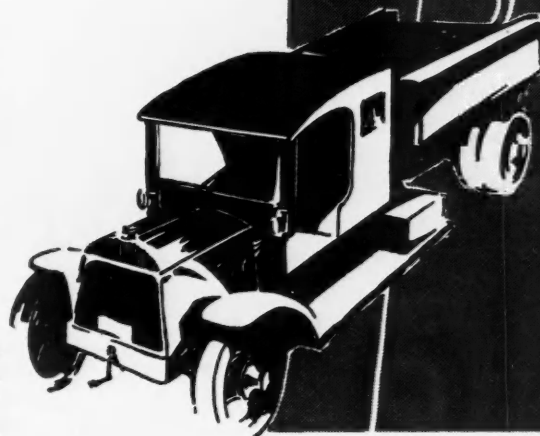
"We recently made a 24-hour run to Chicago for a prospect," said C. C. Morgan, manager, Mack branch, Milwaukee. "He wanted to know whether our truck of a certain size would do the job according to a schedule he had laid out. We made the haul and the sale."

ALLOWANCE

Determines Whether the Used Truck Brings Profit or Loss at Resale

COMMERCIAL CAR JOURNAL AND OPERATION & MAINTENANCE presents here the results of a survey, of a character never before attempted, to throw more light on one of the industry's biggest problems, used truck purchasing and selling.

While the evidence accumulated is not conclusive it is significant and therefore is worthy of careful study.



THE amount of the allowance on a trade-in truck is the factor that determines whether the resale transaction will be profitable or costly.

The basis for this statement is the experience of a typical group of truck dealers operating in various sections of the country as revealed by figures they submitted to COMMERCIAL CAR JOURNAL AND OP-

ERATION & MAINTENANCE, an experience which indicates that in 1928 there was an improvement in used-truck buying and used truck selling.

An analysis of the accompanying composite table, based on dealers' reports, establishes that whereas in

1928 the average resale price per used truck resold at a loss was approximately the same as the average resale price per used truck
(Turn to page 56, please)

An Experience Table of Used Truck Purchasing and Selling

	Used Trucks Sold	Total Allowance	Total Cost of Reconditioning	Total Amount for Which Sold	
9 Months, 1928	789	\$385,402.16	\$67,940.53	\$414,972.54	
All of 1927	647	297,309.02	62,531.47	276,538.92	
					1928 1927 % Decrease or Increase in 1928
Average allowance per used truck.....					\$488.47 \$462.61 + 5.6%
Average reconditioning cost per used truck.....					86.11 96.65 -10.9%
Average resale price per used truck.....					525.94 427.42 +23.0%
	Used Trucks Sold at Loss	Total Allowance	Total Cost of Reconditioning	Total Amount for Which Sold	Total Loss
9 Months, 1928	518	\$290,664.68	\$39,338.56	\$273,530.65	\$56,472.59
All of 1927	519	237,310.30	47,894.67	193,609.72	91,595.25
					1928 1927 % Decrease or Increase in 1928
Average allowance per used truck resold at a loss.....					\$561.13 \$457.24 +22.7%
Average reconditioning cost per used truck resold at a loss.....					75.94 92.26 -17.7%
Average resale price per used truck resold at a loss.....					528.05 373.04 +41.6%
Percentage of loss per used truck resold at a loss.....					17.0% 32.0%
	Used Trucks Sold at Profit	Total Allowance	Total Cost of Reconditioning	Total Amount for Which Sold	Total Profit
9 Months, 1928	271	\$94,737.48	\$28,601.97	\$141,441.89	\$18,102.44
All of 1927	128	59,998.72	14,636.80	82,929.20	8,293.68
					1928 1927 % Decrease or Increase in 1928
Average allowance per used truck resold at a profit.....					\$349.58 \$468.66 -25.4%
Average reconditioning cost per used truck resold at a profit.....					105.54 114.35 -7.7%
Average resale price per used truck resold at a profit.....					521.93 647.88 -19.4%
Percentage of profit per used truck resold at a profit.....					14.7% 11.1%
					1928 1927
Percentage of used trucks sold at a loss to total used trucks sold.....					65.7% 80.2%
Percentage of used trucks sold at a profit to total used trucks sold.....					34.3% 19.8%

THE TRUCK'S PLACE

By Harvey B. Hartsock

The author of this article is general counsel to the Indiana Farm Bureau Federation, Inc., Central States Soft Wheat Growers Association, Inc., Indiana Farm Bureau Purchasing Dept., Inc., Indianapolis District of Dairy Products Exchange, Inc., Hoosier Apple & Peach Growers, Inc., and other agriculturists' co-operatives



Hauling away from the farm, only one of the three classifications of truck uses on the farm

ORDERLINESS in evolution is another proof of a Guiding Mind. What could the pioneer have done with a truck in the days of mud roads? What did he have to haul and where could he have hauled it? Slowly, the forests receded and homes and cities appeared demanding transportation of logs and lumber. As slowly, fields widened, yielding crops to be carried away and demanding return of fertilizer and seed. Pastures had to be fenced; livestock consumed feed and required barns but yielded milk and meat, wool and leather; all requiring hauling. Trails and horses, dirt roads and wagons, railroads and trains, improved highways and motor trucks, have been developed and adopted to keep pace with our growing civilization. Desire breeds invention; invention increases power; power develops desire; thus does civilization move spiral-like outward and upward, demanding more, obtaining more, giving more, in orderly fashion as her people are educated and circumstanced to use her gifts.

IN AGRICULTURE



Could Solomon have been presented with a modern truck, it would have been useless in bringing together the materials for his temple; Hannibal or Napoleon could not have used motor trucks in crossing the Alps or even upon level ground; both gasoline and good roads were then lacking. Gasoline being plentiful and good roads widespread in the United States today, the truck is here at the proper time. What use is it to our oldest and basic industry, agriculture?

There are about 6,371,640 farms in the United States today; of those farms, about 3,909,000 are operated by their owners. Of the more than 3,000,000 trucks in this country, over 600,000 are employed exclusively upon or in connection with farming. If every truck were counted that hauls agricultural products at any stage before consumption, that number would be greatly increased.

Farm Truck Use

The uses to which a farmer puts his truck can be considered under three headings: (1) Work upon the farm, (2) hauling to the farm, (3) hauling away from the farm.

Work for the truck upon the farm is usually incident to hauling fuel, fence or feed. These hauls are to be made often in weather and upon ground not contributory to good results by trucks with their present equipment. Such trips are usually not long and much more time is spent in loading and unloading than in hauling. Sometimes such work demands that the wagon or truck be kept moving constantly or at short intervals, and this may be done by horses without the driver mounting the wagon. This phase of farm hauling, therefore, is not suffi-

More than 600,000 trucks are used on the farms of the United States today. This amount is about one-fifth of all the trucks in use in this country. The importance of this truck market makes the accompanying article of incalculable worth to dealers and salesmen. The article is, in fact, a vocational study containing a mass of selling information.

cient to warrant the farmer in purchasing a truck. If the farmer has his truck, however, he will often find it convenient and profitable to use for hauling in wood, in taking his fencing materials to the place needed, in hauling feed from storage to feeding place, or in similar employment. Many large tracts of land are being farmed almost without the aid of horses or mules; on such tracts, trucks are used even for intra-farm hauls.

Work for the truck upon the farm sometimes includes its use as a stationary engine. This is accomplished by means of a power take-off arrangement provided by its manufacturer, or by the farmer himself, than whom there is no one more adept in obtaining the most service from whatever he has. At such work, the engine in the truck may be caused to propel feed grinders, wood saws, pumps, shredders or other machinery. Such stationary work is exceptional, however, and should be regarded as only a small part of the truck's possible usefulness.

Hauling supplies to the farm offers a much greater chance for profitable use of trucks than does the work upon the farm. The greater the distance to be covered on good roads the greater is the advantage of truck over wagon. In bringing lime or fertilizer, seeds, feeds, young stock or building or fencing materials to his farm, the farmer alone with a truck can haul as much as three men with teams could haul, and can bring his loads from a distance three times as great.

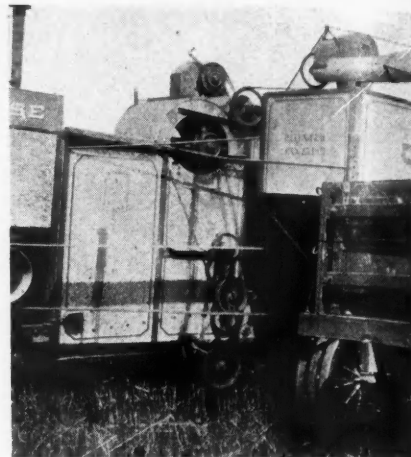
He has a much greater territory available from which to draw his supplies than he had with horses and wagon. If his truck travels five times as fast as horses, his new circle of activity has a radius five times that of the old circle; multiplying the radius by five multiplies the area 25 times. Within this larger circle the farmer usually finds towns, railway stations, farms, orchards, mines, quarries, gravel-pits, or other sources of supply not accessible for him before he used a truck. He will find advantages in prices, freights and qualities, in this larger circle, that must be credited to his truck.

It is in hauling products away from the farm that the truck renders its greatest service to the farmer. The farmer's exports are much greater in bulk and weight than his imports. Except for occasional livestock brought in for feeders or breeders, the farmer's inward shipments require less speed and care than his outward shipments. While the larger cruising radius given the farmer by the truck enables him to buy more advantageously, it assists him much more in selling. His wheat crop needs to be delivered as thrashed to avoid shrinkage and other losses;

the truck provides quick delivery to the cooperative's elevator or to any one of several millers or shippers within the increased hauling distance, so the farmer no longer needs to accept what his nearest buyer offers. The same changed situation exists with respect to other grains. Markets for fruits, vegetables and other perishables may be reached by truck in early morning hours with the produce fresh and commanding the best prices which often was simply not possible in wagon days. As a result, orchards, berry farms and vegetable gardens cover many acres which formerly were unproductive.

In none of his marketing does the farmer find the truck more helpful than in selling his livestock. Until the advent of the truck, he had to have a carload before he could afford to send his stock to a central market. Ordinarily, he sold to a buyer who would announce when he wished the farmer's stock delivered at a local shipping point. Then came the task of driving the stock on foot, or hauling them by wagon, to that point, there to be weighed after loss, and to be loaded with strange stock for a long, hot, riotous ride to the central market where the buyer hoped to get his money back. Of course, in buying from the farmer he made allowance for losses en route and by all probable falls in market prices before the market could be reached. Now the farmer can watch the prices by radio or daily paper, truck his own stock himself to the central market or to any other of several now accessible by truck, arrive there in the cool of the morning with his stock quiet, not hungry or exhausted, and obtain the best prices. These advantages are so great that livestock shipments by truck are rapidly growing. The Indianapolis market receipts of livestock in 1920 came 73.2 per cent by railroad and 26.8 per cent by truck. These percentages have steadily shifted until today the railroad portion is 51.7 per cent and the truck, 48.3 per cent. The railroad percentage includes through shipments; 95 per cent of all stock coming to Indianapolis from territory less than 50 miles away arrives by truck.

Trucks tend somewhat to decentralize markets. The farmer more frequently delivers to the consumer or to a small dealer than he did prior to the day of telephone and truck. Packers and other dealers often send their trucks directly to the farmer or to local collection points and prevent much stock and other produce going through a central market. Commission merchants interested in central markets claim that this new condition lessens competition in bidding at the central markets, thereby lowering its prices, and as those are used as a basis for the prices offered at the farm or local



The truck used in intra-farm work, recei

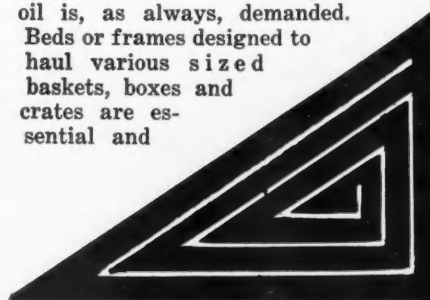
point, the net result is lower prices to the farmer. There is much truth in the contention. The remedy may be found, however, in a stock-raisers' cooperative organization that studies costs and world market conditions and advises as to prices, and that also may operate a fleet of trucks for collecting livestock to central markets, rather than by abandonment of market truck operated either by seller or buyer.

Type Depends on Service

The kind of truck most serviceable to a farmer depends upon the needs of that farmer. If he is raising vegetables on a small tract of land and marketing them in a city, he will give more attention to the features of the truck that make it serviceable upon the road and in the town; if he is farming 100 or 200 acres of land, raising diversified products, he will demand a truck more adaptable to various uses; if he is operating a grain ranch, he will desire a heavier truck for long hauls and probably one with trailers. By far the greatest number of trucks used by farmers today are less than 2-ton capacity; almost 50 per cent are of the 1-ton size; probably 30 per cent are of the half-ton size.

For the man marketing berries, fruits or vegetables in the city, a 1-ton truck is the most serviceable. In this work, he will not need to take the truck often off fairly good roads or hard ground. The product is usually assembled in baskets at the roadside and the service of the truck is distinctly that of hauling quickly to market. Pneumatic tires almost exclusively are used in this work and a fair road speed is necessary. Economical use of gasoline and oil is, as always, demanded.

Beds or frames designed to haul various sized baskets, boxes and crates are essential and





ving a load direct from harvester-thresher

if the cab is designed so the driver may rest, or even sleep, in it during the time he may be waiting in the city for the market to open, it is an additional attractive feature.

By the grain raiser of the West, trucks as large as 3 tons are often employed and trailers enabling him to form a train are often used during harvest time. For this use, the beds must be designed to receive and haul, without leakage; small grain and dumping features are essential to save time from scooping. Speed is here necessarily sacrificed for stability and endurance but even in these heavier trucks the farmer desires a speed of 20 or 30 m.p.h. The trucks are required to go into the fields alongside combines and thrashers, and for that reason their engines must be well protected against dust. Because such trucks are used in the field, they should have broad tires.

A Truck for Several Uses

It is the farmer who desires to use his truck for many purposes who is most difficult to satisfy. The task here is to provide a truck adaptable to several uses without permitting it to become a "jack of all trades and good at none." The ordinary farmer cannot afford more than one truck, and he will desire to do some hauling on his farm itself and also to haul many different kinds of products both to and away from his farm. It is necessary to have an engine that is somewhat simple because the truck will be used under such a variety of weather and dust conditions and it may fall into the hands of either a careful or careless operator. It should give great power, in lower gears, for climbing hills, and it will need, on higher gears, to develop a speed of at least 35 or 40 m.p.h. to give satisfaction on those frequent road trips

which the farmer will demand of it. The bed of the truck should be supplied with a solid bottom and have interchangeable sides and ends so that it may be adapted to hauling livestock or to hauling corn and potatoes or possibly even such small grain as wheat or oats. A device for dumping is very useful as, more often than not, it will save labor and time if the farmer can unload by allowing the contents to slide out the back end.

Since very few small farms are operated by enough men for one to be driving while others are loading or unloading, there is little demand by farmers for trucks designed so that the bed may be unhitched from the cab and engine. Possibly on large ranches such trucks would find sale but not in the greater portion of our agricultural areas. Such arrangements are, of course, quite advantageous where much of the same material is to be hauled from one place and unloaded at another, such as in road construction or delivery of factory products to places of shipment.

It is very seldom that the operator of the diversified farm will buy a truck without pneumatic tires. These tires, however, do not provide sufficient base to equip the truck for use upon soft ground. It would add greatly to the use of the truck on the farm if it could be made adjustable for such use. Possibly someone will invent an adaptable caterpillar tread, chain or band which can be thrown around the two wheels on either side of the truck; this would be easily possible were it not for the problem of steering.

Some equipment which would enable a farmer to take his truck to the place where the material hauled is to be obtained or used, without employing sleds or wagons between such place and the firm ground where trucks may now go, is probably the greatest bit of equipment needed to advance sales of trucks to farmers.

Cooperative Marketing

Cooperative organizations among agriculturists and dairymen are finding the truck of great advantage to them. There are now 11,400 active cooperative associations in the United States in which more than 2,000,000 separate individuals are members, distributed as follows: Grain, 900,000; dairy, 600,000; livestock, 450,000; fruit and vegetable, 215,000; miscellaneous, 140,000; purchasing supplies, 398,000. In 1927, the business done by these various cooperatives was as follows: Grain, \$680,000,000; dairy, \$620,000,000; livestock, \$320,000,000; fruit and vegetable, \$300,000,000; miscellaneous and purchasing, \$200,000,000. Of these cooperatives, the greatest growth lately has been in the North Central States.

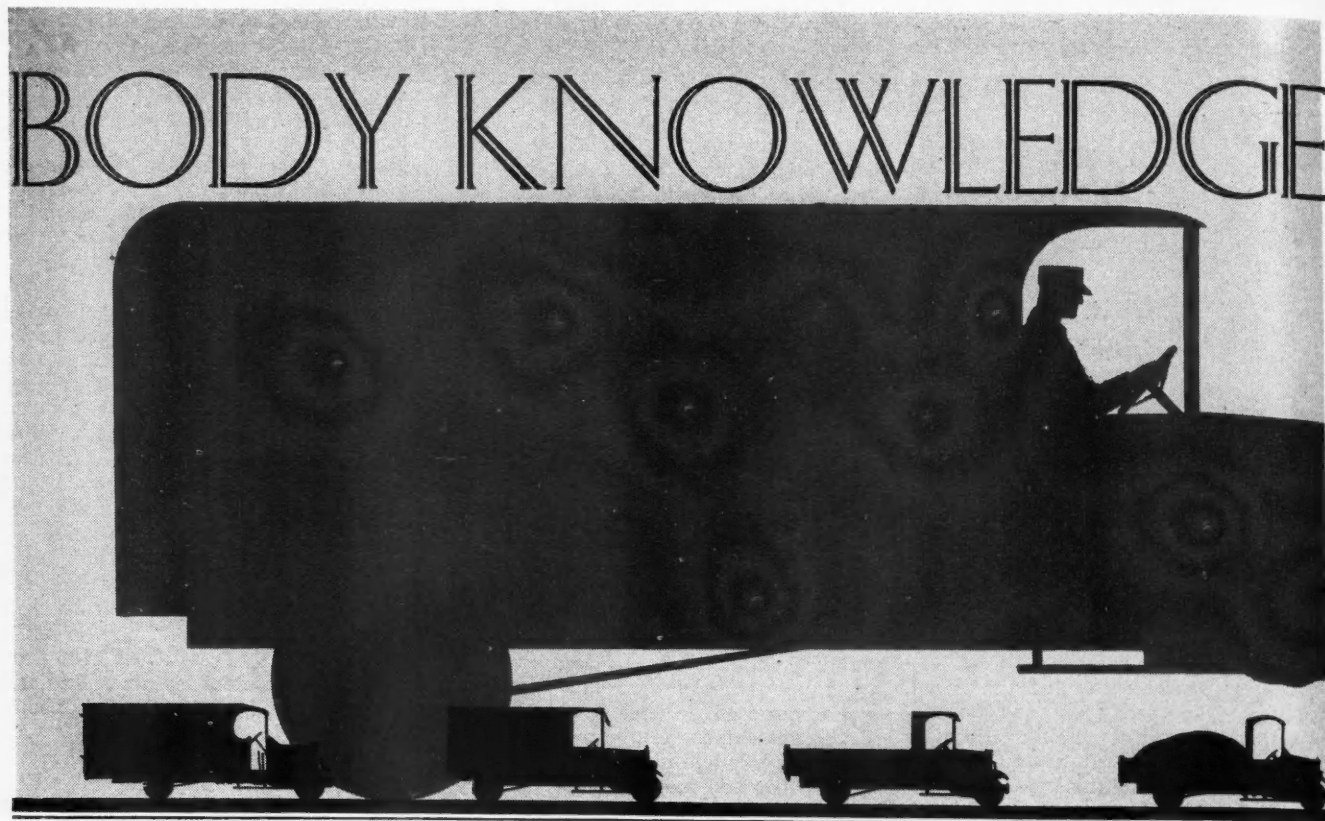
Many of the dairy marketing associations could not exist without the truck. Thousands of acres of land, until recently non-profitable, now graze dairy herds and their owners put the milk in cans on platforms at their own gates upon a highway traversed by a cooperative dairy truck which regularly calls for the same and transports them either to a processing plant in a city or to a collection point in which the milk is cooled and from which it is taken in glass tank cars to the city bottling plant. This industry has withstood in the last few years grown marvelously. The Indianapolis District of Dairy Producers Exchange has been operating only a few months but already employs 68 trucks, each averaging 60 miles daily; 20,000 gal. of milk are obtained daily from about 1700 producers in seven counties about Indianapolis and yield the producers about \$35,000 a week.

Students of the problem are agreed that the agricultural producers' relief will come mostly through their own cooperative efforts. It is probable that cooperatives, wherein service is the dominant factor and savings are distributed to patrons, will succeed old line corporations, wherein profit is the goal and dividends are paid only to stockholders. Certainly cooperatives are doing more for the farmers than any other one kind of assistance today. Cooperatives assist the agricultural producer both in selling his product and in buying his supplies. Usually a cooperative specializes in marketing a particular kind of product or in purchasing supplies. Sometimes, though usually to a less successful degree, a cooperative may engage in marketing two or more kinds of agricultural products or in both selling and buying for its members.

Whether a cooperative itself employs trucks, depends upon its nature. The grain cooperatives usually do not, inasmuch as they only receive the grain at conveniently located elevators and take charge of its marketing; the grain being moved from that point by railroads. Livestock, poultry, tobacco, cotton, fruit and vegetable cooperatives have likewise depended upon their members or patrons to bring their products to central markets or collection points from which the products are removed by train. A cooperative marketing only a seasonal crop could not profitably own and operate a fleet of trucks for its patrons' accommodation, but cooperatives which have a more nearly all year around business, such as the livestock and poultry cooperatives, might well furnish such service.

The purchasing cooperatives are beginning to operate small fleets of trucks and among such associations there is

(Turn to page 58, please)

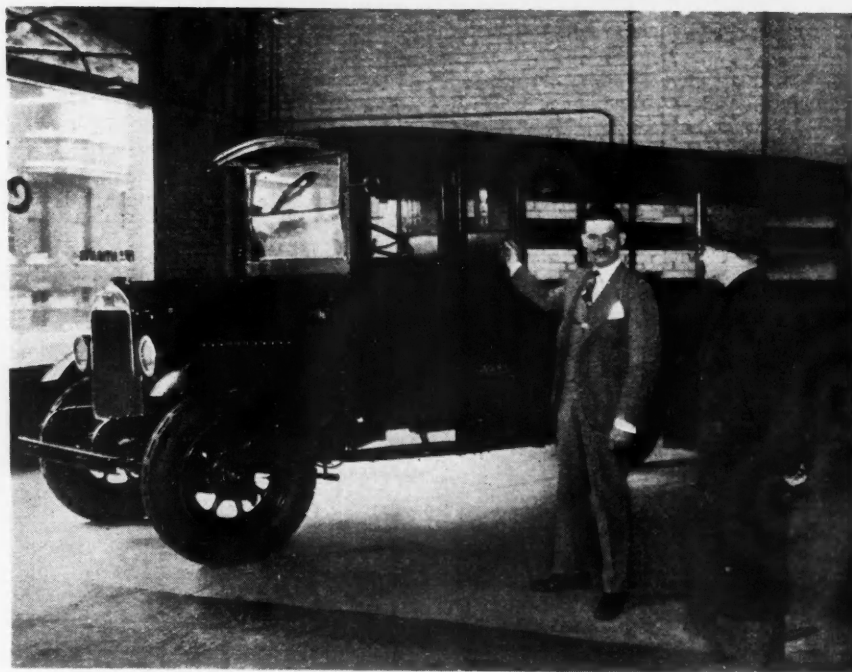


A GREAT deal has been written about the necessity of selling the proper size and type of truck to fit the job, but just as much could be written about selling the proper size and type body to fit the truck. Quite likely you will find that when a truck is not performing properly the inefficiency, in a great measure, is due to a misfit body installation rather than to the wrong choice of truck.

The body requirements of a florist, department store, baker and grocer are entirely different, and yet we find there is an attempt made to sell each of the above named businesses the same type of stock panel body. More and more truck operators are giving serious thought to their body requirements, and it behooves every salesman to prepare himself accordingly. The successful truck salesmen of the future will be those who have studied this body problem and acquired a thorough knowledge of the needs of various vocations and the salesmen who lack this knowledge will simply pass out of the picture.

Salesmen are in an advantageous position today due to the fact that manufacturers of both commercial trucks and bodies are building a line of stock bodies which covers the field extensively. The truck salesman has a wide variety of stock bodies to choose from that are made expressly for the different vocations. The first requirement is for him to be able to recommend the right kind of stock body. Of course, there are some body problems that come up which are entirely new and require considerable thought and experimenting before the salesman can decide definitely on some standard design.

January, 1929



At left is Wm. J. Kephart, author of this article, who believes that salesmen should be prepared to offer the prospect sound recommendations as to the body best fitted to meet his particular requirements

Recently a fish dealer approached the writer in reference to a truck chassis with a body to carry live carp a distance of 100 to 150 miles. Now, frankly, I knew nothing about live carp or anything about the type of body necessary to carry them. However, here was a chance to sell a truck and it was up to me to suggest the proper body.

The decision was finally made to sell the customer a 1½-ton chassis with standard closed cab and a stock canopy express body with side curtains, the body measurements being 9 ft. x 48 in. An iron tank 9 ft. long, 45 in. wide and 30 in. high was built and set inside the express body. This tank was filled with water and the live carp carried

The Commercial Car Journal
and Operation & Maintenance

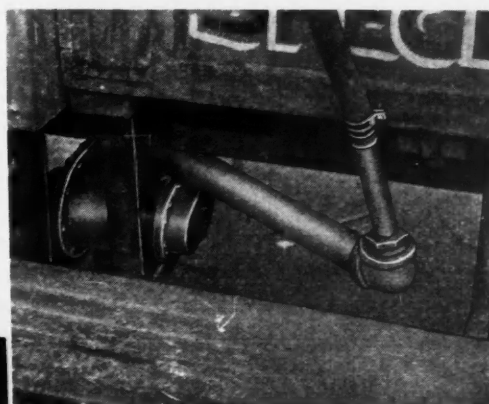
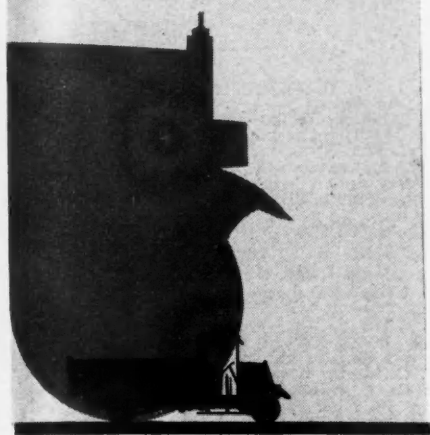
MEANS MORE SALES

Truck Salesmen Should Be Equipped to Fit the Body as Well as the Chassis to the Job. Wide Variety of Stock Models Aids Recommendations.

By

Wm. J. Kephart

*Philadelphia Branch Manager,
Hahn Motor Truck Corp.*



in this tank. But, here's what happened on the first two trips. We found that the tank was too heavy; it became rusted all over, and 50 per cent of the fish died. It was also discovered the water could not be kept fresh, and that it needed to be agitated more to keep the carp active. Guided by this knowledge we built a new tank of the same size but made it of zinc bound with iron strips and installed it in the stock body. To the transmission power take-off we connected an air pump and ran a hose from the pump into the tank. This change resulted in a non-rusting, considerably lighter weight tank, and the pump agitated the water and freshened it so that today shipments of live carp are being transported with very little loss, and the distance they can be hauled alive greatly increased.

Salesmen in selling trucks today spend quite a lot of time in studying their own truck chassis and those of their competitors. They pore over specifications trying to find good talking points in their own trucks and weak ones in their opponents'. Sales talks are usually built around the construction of the truck chassis, and the prospect is deluged with a mass of technical data which he may or may not understand.

It is understood that it is absolutely necessary that a salesman know his own chassis thoroughly and something of his competitors', but, that is not enough; he must go considerably further. When a buyer is considering the purchase of a truck, it is usually with



A fish dealer wanted to transport live carp. Guided by acquired knowledge the truck salesman solved his problem and sold the above equipped with zinc tank. An air pump operated from the power take-off was used to agitate the water and keep it freshened

the thought in mind of transporting his product, and in some cases this transportation involves the use of a special built body made to fit the requirements of his merchandise, so the salesman should be in a position to recommend the right type of special built body if a stock job will not suit.

Now the average salesman calls on a prospect, and we'll suppose he has pretty well sold the buyer on his chassis, and the subject of the body is introduced. Right here is where the fun starts because the buyer is in his own

(Turn to page 56, please)

FLAT RATE PRICE LIST NUMBER 25 REO TRUCKS

Camshaft

7. Remove and replace or renew camshaft after radiator and front cover are off.
 - F4\$ 4.75
 - T65.50
 - Jr.6.25
 - F & G6.00
8. Renew front camshaft bearing after radiator and front cover are off.
 - F44.60
 - T65.20
 - Jr.5.60
 - F & G5.90

Clutch

1. Clutch pedal, adjust.
 - F4 & T6\$ 0.40
 - Jr.1.10
- (a) Clutch ring, adjust.
 - F & G\$ 1.75
3. Clutch assembly remove, dismantle, reassemble and reinstall.
 - F4\$ 7.90
 - T67.90
 - Jr.7.90
 - F & G12.00
4. Clutch release bearing, renew.
 - F4\$ 6.00
 - T66.00
 - Jr.8.00
 - F & G6.00
7. Fit clutch disks for clearance, clutch removed.
 - F4\$ 1.75
 - T61.75
 - G1.75

Flywheel

10. Tighten flywheel after clutch has been removed.
 - F4\$ 0.40
 - T640
 - Jr.60
 - F & G60
11. Flywheel, remove and replace or renew.
 - F4\$ 8.35
 - T68.35
 - Jr.11.00
 - F & G14.25
12. Flywheel, remove and replace after clutch is removed.
 - F4\$ 2.20
 - T62.20
 - Jr.3.00
 - F & G2.20
13. Starter ring gear on flywheel, renew after flywheel has been removed.
 - F & G\$ 2.25

Transmission

1. Transmission assembly, remove and replace.
 - F4\$ 7.00
 - T67.00
 - Jr.4.50
 - F & G10.75
2. Drain, clean, inspect and refill.
 - F4 & T6\$ 3.75
 - Jr.3.40
 - F & G4.10
3. Overhaul, including control assembly.
 - F4\$17.50
 - T617.50
 - Jr.10.50
 - F & G20.25
4. Control assembly only, overhaul.
 - F4\$ 5.50
 - T65.50
 - Jr.4.50
 - F4.50
 - G4.50
6. Transmission overhaul, after assembly has been removed.
 - F4\$10.50
 - T610.50
 - Jr.6.00
 - F9.50
 - G9.50
7. Clutch shaft, renew after transmission has been removed.
 - F4\$ 1.10
 - T61.10
 - Jr.75
 - F & G1.10

NOTE

Engine operations are continued from the December issue.

Models F4, T6, F and G have separate fans and pumps. Fan and pump are combined in one unit in the Speedwagon Jr. This difference in construction is important in looking up prices on fan and water pump.

Midship transmissions are employed on Models F4, T6 and G. Unit powerplants are incorporated in GA, GC, GD, the Speedwagon Jr., and all F series except F4.

Operations are based upon those in the Rapid Flat Rate Price List for passenger cars published by Chilton Class Journal Co. Changes have been made where necessary to meet differences in construction of particular truck models.

Radiator

1. Remove and replace radiator.
 - F4\$ 3.15
 - T63.15
 - Jr.3.15
 - F4.10
 - G5.00
2. Core and tank unit, renew.
 - F4\$ 3.50
 - T63.50
 - Jr.3.50
 - F4.50
 - G5.25
3. Shell renew, All models\$ 1.50

Hose

5. Top hose, engine to radiator, renew, All models\$ 0.75
6. Lower hose, radiator to pump or cylinder, renew.
 - F4\$ 1.10
 - T675
 - Jr.75
 - F & G75
7. Pump to cylinder hose, renew.
 - T6\$ 75
 - F & G75

Fan

8. Renew fan belt.
 - F4\$ 0.90
 - T61.10
 - Jr.1.50
 - F & G1.10
9. Shaft bearings, renew.
 - F4\$ 3.00
 - T63.00
 - Jr.3.50
 - F & G3.00
10. Fan assembly, remove and replace or renew.
 - F4\$ 1.60
 - T61.60
 - F & G1.60
- (a) Fan and pump unit, remove and replace or renew.
 - Jr.\$ 5.00

Water Pump

11. Water pump (not in unit with fan), remove and replace.
 - F4\$ 4.25
 - T62.85
 - F & G3.00
12. Water pump assembly, including fan if integral, overhaul.
 - F4\$ 7.00
 - T66.00
 - Jr.6.75
 - F & G5.75
13. Pump packing, renew all.
 - F4\$ 0.90
 - T61.75
 - Jr.25
 - F & G1.75

Manifolds

1. Inlet manifold to cylinder gas-kets, renew.
 - F4\$ 2.00
 - T61.70
 - Jr.2.40
 - F & G1.70

2. Exhaust manifold to cylinder gas-kets, renew.
 - F4\$ 1.50
 - T61.75
 - Jr.1.50
 - F & G1.50

3. Intake and exhaust manifold gas-kets, renew all.
 - F4\$ 1.75
 - T61.75
 - Jr.1.75
 - F & G1.75
4. Renew gasket between manifold and exhaust pipe.
 - All models\$ 1.25
5. Renew broken stud after manifold is off.
 - All models\$ 0.90
- (a) Renew broken stud after manifold is off when necessary to drill.
 - All models\$ 1.50

Fuel System

6. Carburetor, remove and replace.
 - F4\$ 1.25
 - T61.60
 - Jr.1.75
 - F & G1.65
7. Carburetor, remove, disassemble, clean, reassemble and reinstall.
 - F4\$ 1.75
 - T62.65
 - Jr.2.85
 - F & G2.65
8. Carburetor choke wire renew.
 - F4\$ 0.90
 - T61.10
 - Jr.1.25
 - F & G1.25
9. Gasoline tank, remove, clean and install.
 - F4\$ 6.75
 - T66.50
 - Jr.6.50
 - F & G6.50
10. Clean gas tank and gas line by blowing with air and tighten pipe connections.
 - F4\$ 0.90
 - T61.50
 - Jr.1.50
 - F & G1.50

Muffler

12. Remove and replace or renew muffler.
 - F4\$ 3.50
 - T63.00
 - Jr.3.00
 - F & G3.00
13. Clean muffler after it has been removed.
 - All models\$ 1.15
14. Tighten muffler, tail pipe and exhaust pipe.
 - All models\$ 1.50

Ignition

1. Breaker points clean and adjust.
 - All models\$ 0.75
2. Breaker points renew, includes retiming.
 - F4\$ 1.90
 - T6, series A3.40
 - T61.90
 - Jr.1.70
 - F & G1.90
3. Points reface, retime, and clean spark plugs.
 - F4\$ 4.30
 - T64.30
 - Jr.4.20
 - F & G4.30
4. Ignition unit, remove and replace or renew.
 - F4\$ 1.75
 - T61.75
 - Jr.2.35
 - F & G2.35
6. Spark plugs, clean and adjust all.
 - F4\$ 1.40
 - All six-cylinder models1.75
7. High tension cables, renew all.
 - All models\$ 1.25
17. Ignition switch, renew.
 - F4\$ 2.00
 - T62.15
 - Jr.5.00
 - F & G1.65

INTERSTATE CARRIERS

Are Subject to State Insurance Laws

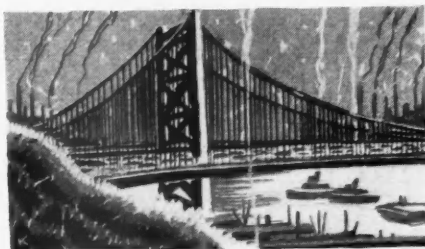
THE varying state laws dealing with the requirement of public liability and property damage insurance or indemnity bonds and with the posting of penal bonds to assure the fulfillment of obligations of common carriers engaged in freight and passenger transportation have been discussed in a previous article. (1) The courts have interpreted these laws in a number of leading cases in deciding whether or not the provisions of the state statutes requiring insurance or indemnity bonds of motor freight or passenger carriers constitute undue burdens upon those engaged in interstate commerce.

The Decision of the United States Supreme Court in the Clark Case

In the case of Clark versus Poor, et al., Public Utility Commissioners of Ohio, the United States Supreme Court reviewed the law in this field of regulation. (2) The Ohio Motor Transportation Law provided, in part, that no certificate of convenience and necessity should be granted by the Ohio Public Utility Commission until a policy covering liability and cargo insurance had been filed with the Commission.

Clark & Riggs, the motor carrier operators involved in this case, operated a motor truck line between Cincinnati, Ohio, and Aurora, Illinois. They were engaged exclusively in interstate commerce as common carriers of freight. The Ohio law was ignored by Clark & Riggs and no application was made for a certificate of public convenience and necessity. The Ohio Commission sought to interfere with their service and suit was brought in the Federal District Court to enjoin the Commission from enforcing the provisions of the law against these interstate motor freight carriers. (3)

The case was heard originally in the Federal District Court before three judges on final hearing. The Ohio Commission recognized before suit was begun that where an interstate carrier was engaged in interstate commerce exclusively the Commission had no discretion in granting a certificate of public convenience and necessity upon application, and it was willing to grant Clark & Riggs a certificate had they applied for one and expressed their intention



to abide by other provisions of the law. In this policy the Ohio Commission was guided by the line of decisions of the Supreme Court of the United States in the case of Buck versus Kuykendall (4); and Bush versus Maloy, et al. (5).

The bill of injunction was dismissed in the Federal District Court, and appeal was taken directly to the United States Supreme Court, a restraining order having been issued and an interlocutory injunction having been applied for.

The stand taken by the motor operators in this case was that the Ohio act was unconstitutional since they were engaged exclusively in interstate commerce. Among other things the carrier urged before the United States Supreme Court that the decree of the lower Federal court be reversed because of the provision of the Ohio act concerning liability and cargo insurance. The lower court held that under the decision of the United States Supreme Court in the case of the Michigan Public Utilities Commission versus Duke, the insurance provision of the Ohio law could not be enforced. (6)

In the appeal before the United States Supreme Court the counsel for the Ohio Public Utilities Commission stated that the requirements concerning insurance would not be insisted upon by the Commission. Justice Brandeis speaking for the Supreme Court said in this connection:

"It is not clear whether the liability insurance for which the act provides is

against loss resulting to third parties from the applicant's negligence in using the highways within the state, or is for loss to passengers resulting from such negligence, or for both purposes. We have no occasion to consider whether under any suggested interpretation, liability insurance as distinguished from insurance on the interstate cargo may be required of a carrier engaged wholly in interstate commerce." The Supreme Court dismissed the bill, but without prejudice to the right of the motor freight carrier operators to seek appropriate relief by another suit if they should be required by the Ohio Commission to comply with conditions or provisions not warranted by law.

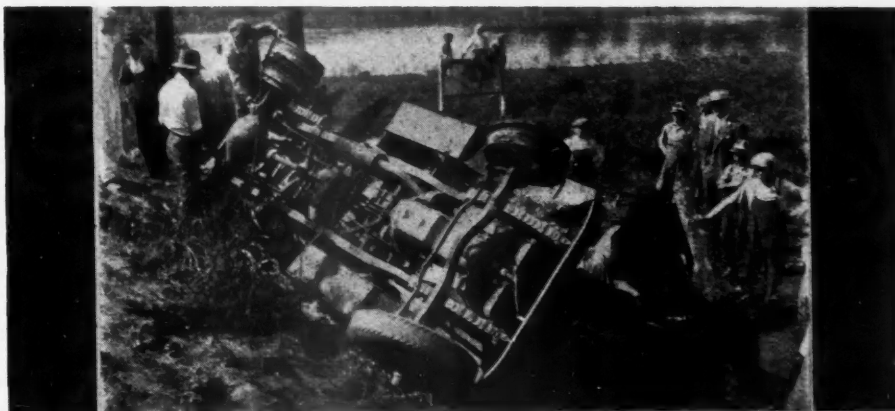
The principle of this decision seems clear that a state may require, under the police power of the state, any reasonable non-prejudicial regulations pertaining to the use of its highways to apply alike to both intrastate and interstate carriers using the highways, but regulations which apply to interstate commerce in such a way as to place a burden upon interstate commerce sufficient to obstruct it are unconstitutional.

The Decision in Hess Versus Pawloski

In its decision in the Poor case the Supreme Court cited its prior decision in upholding the right of the state to regulate the use of the highways by non-residents of the state as well as by residents. (7) In this case the Supreme Court decided that the power of a state to regulate the use of its highways extends to the regulation of their use by non-residents as well as by residents and that reasonable requirements as conditions precedent to the use of the highways by non-residents does not violate the due process of law clause of the fourteenth amendment to the Constitution of the United States.

The Sprout Case Decision

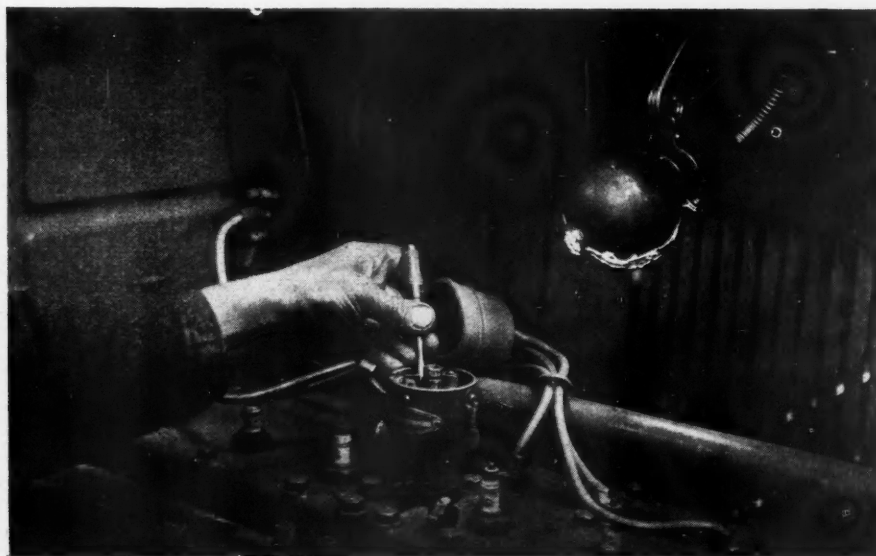
The Federal Court in the case of Sprout versus the City of South Bend held that a municipal ordinance requiring motor vehicle operators to file an indemnity bond written by an insurance company authorized to do business in the state does not place any restriction upon interstate commerce so as to fall within (Turn to page 50, please)



TROUBLE

TROUBLE shooting is a branch of truck repair work which appears mysterious to a beginner or a driver not mechanically trained. Watching an expert mechanic or inspector at work he marvels at the seeming ease with which one trouble, of a host of possible faults, is located and corrected. Asking mechanics how they do it does not bring forth much information because many who are wizards at shooting trouble cannot explain their methods to others.

Experienced trouble shooters get all the information they can from drivers before trying to start an engine. The driver's observations are valuable if he knows the meaning of what he sees and hears. Popping back in a carburetor means lack of gas, sudden dying of an engine suggests ig-



Above: Check of fuel supply starts at the carburetor. If there is no drain in the carburetor bowl the pipe leading to the carburetor is disconnected or the fuel filter sediment chamber is removed. When gas flows freely inspect the carburetor, if no gas flows trace the fuel line from this point to tank

Left: Take off the distributor cap and rotor and look at the breaker points. If the points are okay watch them while the engine is cranked to see if they open and close. Current flow to points may be checked by opening and closing them quickly by hand with the switch on

niton failure, lack of oil shows up in reduced power and a distinctive "dry" sound.

With this information at hand perhaps the trouble may be located at once. If not the next move is to try to start the engine. The action of the starter, if any, will tell much. In case nothing happens when the



SHOOTING

Mechanics Expert in This Art First Try to Diagnose the Complaint by the Driver's Story Then Check Spark, Gas and Compression by Elimination

this condition to start it is expensive; the starter shaft may be bent, teeth ripped out of the flywheel or the starter mounting broken.

Compression, ignition and a proper mixture of fuel and air are three essentials for engine operation. While compression may gradually decrease over a long period it usually does not fail all at once. However, a check of compression by cranking is useful because it also reveals mechanical troubles and broken parts. Loss of compression in one cylinder may have no other effect than cutting that cylinder out of action. An inlet valve which leaks badly may interfere with operation of other cylin-

ders. In fact, a warped inlet valve, due to too close adjustment of tappet, may cause erratic action of the engine which is puzzling because it may be blamed upon the ignition.

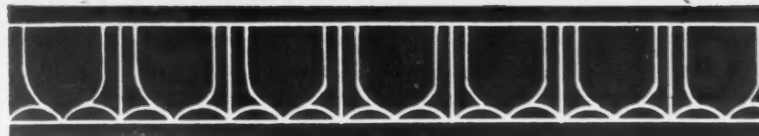
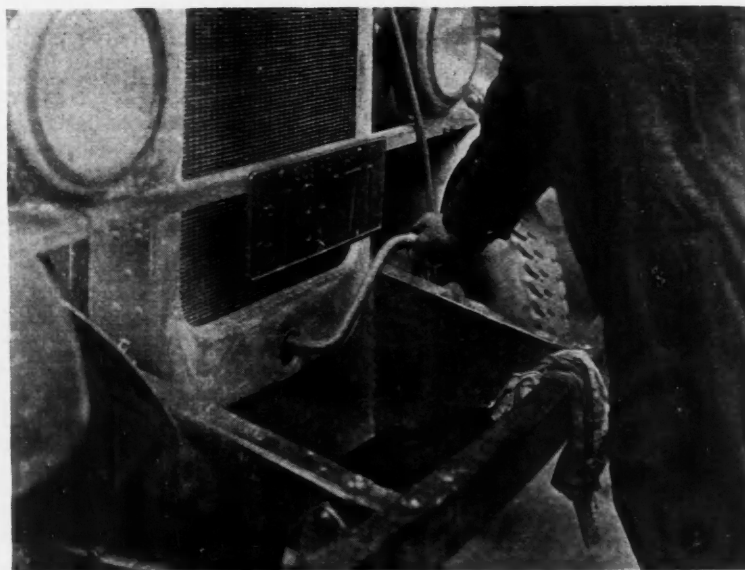
Trouble with ignition may be the result of sudden breaking of a wire or some part or it may be due to natural wear, as of breaker points. If an engine is apparently running all right when it is stopped and cannot be started again, both ignition and fuel should be checked.

An engine can operate with a mixture that is far from correct. There is not so much leeway on the lean side but there is on the rich side. Mere variation in mixture seldom causes a stoppage on the road. In fact, lack of fuel at the carburetor is the first thought when trouble is traced to the carburetor.

An idea for locating trouble by a definite plan rather than guesswork is explained in the accompanying illustrations and captions.

Right: Crank the engine by hand to check mechanical condition and compression, especially if the driver reports a lot of noise before the engine stopped. Racing drivers usually take out the plugs before cranking when internal trouble is suspected—a good idea when inspecting truck engines

starter switch is closed there is no current in the battery or the current is not producing any results. Battery condition is tested by turning on the lights, and closing the starter switch again; if the lights go out the trouble is probably at the battery. A loose ground connection which makes contact at times and not at others may cause no end of trouble. A whir or grunt, without the engine turning over, when the starter switch is pressed, indicates that the starter gear is stuck in the flywheel. The gear may be loosened by turning the flywheel backward in many cases, in others it is necessary to take the starter off. Towing an engine in



SERVICE HINTS

FROM SHOP AND

Checking Flywheels

The rim of a flywheel should run true within .006 in., according to Continental Motors service department. It advises that this condition can be measured by means of a dial indicator clamped to the flywheel housing as shown in Fig. 1. If the flywheel varies more than .006 in. it must be taken off and any foreign matter or chips removed from the face of the crankshaft flange or the flywheel recess.

Two tapped holes are provided in the flywheel for pulling it from the flange. Cap screws with threads at least 2 in. long should be used for this purpose. The manner of pulling a flywheel is shown in Fig. 2.

Continental flywheels are attached to the crankshaft by six bolts. One of these bolts is offset 1/16 in. so that the flywheel cannot be assembled except in one position.

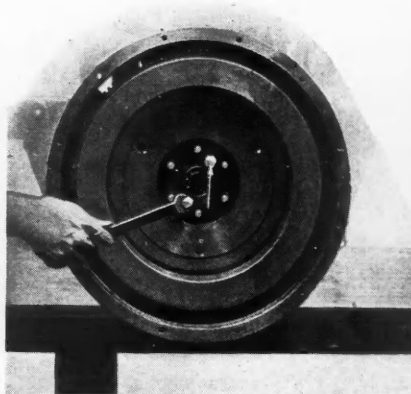


Fig. 1. Checking flywheel with indicator. support for the instrument should be as short as possible to reduce vibration

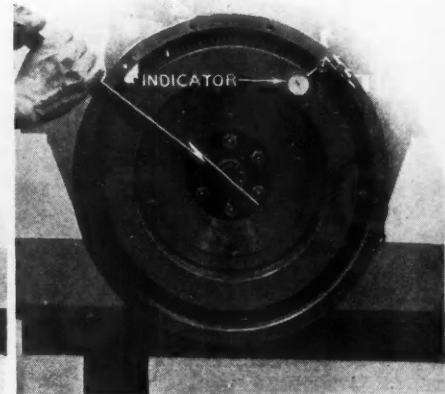


Fig. 2. Two cap screws are used to pull flywheel from crankshaft flange

Lock Up Pin And Ring Sets

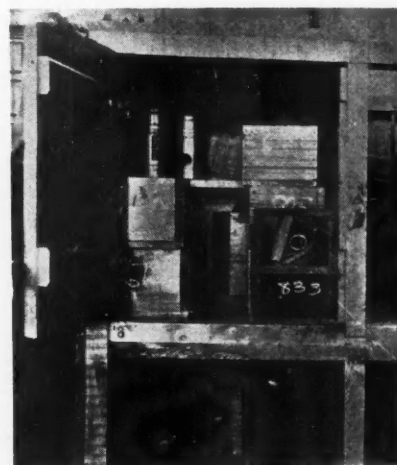
Sets of piston pins and rings for re-ground or spare cylinder blocks are placed in separate boxes and kept in a locked cabinet in the Newark Shop of the Standard Oil Co. of N. J. This is contrary to the usual practice of leaving the pins and rings in the cylinder bores after fitting. The latter plan has one disadvantage in that such pins and rings are likely to be "borrowed" by mechanics working on other jobs. A new ring snaps and the mechanic may take one out of a fitted set in a block rather than go to the stockroom.

the block is marked in chalk on the box containing the piston pins and rings for that block.

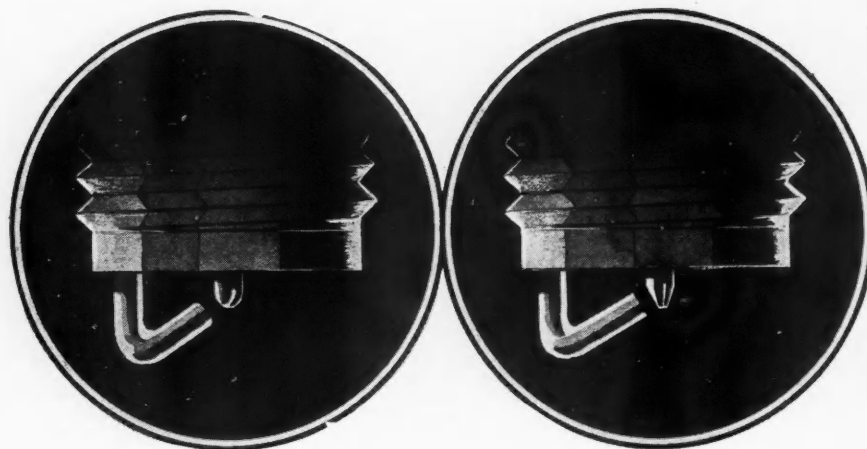
New Spark Plug Gap

Spark plugs in Studebaker 75 engines now have a new style gap setting, as indicated in the drawing. The center electrode is tapered and the side electrode has a flat end so that the spark takes place between two flat surfaces.

Change to the new style gap setting can be made in plugs now in use by grinding the center electrode to a slight even taper at the end and filing



Sets of fitted piston pins and rings are kept in separate numbered boxes in a locked cabinet



Old style setting

New style setting

Cylinder blocks are stored in compartments in the cabinet as shown in the photograph. The shop number of

the end of the side electrode. The points should be adjusted so that the flat surfaces are parallel.

Protect the Battery in Winter

THE three main injuries that may occur to the storage battery of a truck or bus in winter are freezing of electrolyte, corrosion of terminals and mountings, permanent injury.

Naturally, in the winter operation of buses and trucks, the main thing to be considered in the care of the storage battery is to prevent freezing.

The point at which the electrolyte will freeze will depend entirely upon its strength. An acid solution of 1.250 specific gravity will not freeze until at about 62 deg. below zero, but one of 1.150 specific gravity will freeze at

FACTORY



Taped Flashlight for greasy hands

about 5 deg. above. Consequently, the battery should never be allowed to become run down or completely discharged in winter. In cases where the battery is subjected to low-temperature conditions for a relatively long period, attention is called to the fact that the electrolyte will become mushy before it freezes solid.

In order to make sure that battery solutions are of the proper concentration, gravity of the battery solutions should be checked by means of a hydrometer at least twice a month.

If the hydrometer reading shows the gravity of the solution to be between 1.225 and 1.150, it indicates that the battery is about half charged, in which case the lamps and electric starter of the truck or bus should be used as little as possible until the specific gravity of the battery solution reaches the particular gravity recommended by the battery manufacturer.

If the hydrometer reading shows the gravity of the solution to be less than 1.150, it indicates that the battery is discharged, in which case it should be given a bench charge. It might here be mentioned that such a condition of the battery is often an indication of trouble in the electric system, and hence may make necessary an adjustment or correction of the wiring arrangement.

If the gravity of the solution in one cell of the battery differs from that of any other cell by 50 points or more, it is an indication of either loss of electrolyte, improper addition of electrolyte or internal trouble in the battery.

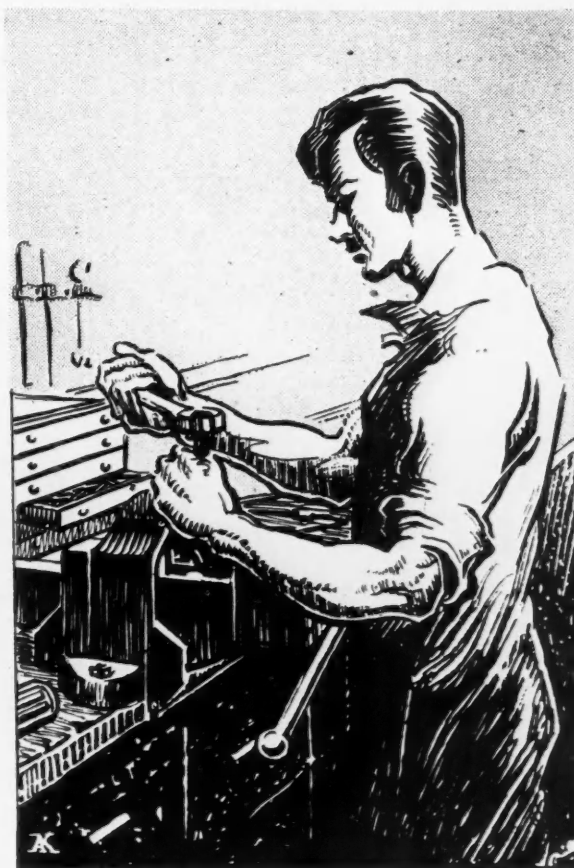
Every driver of a bus or truck is well acquainted with the fact that at all times the battery plates should be properly covered with the battery solution, namely, to a level three-eighths of an inch above the top of the plates.

At all times—winter or summer—

care should be taken not to add more liquid than required, since much damage can be done through corrosion of terminals and mounting. Also, keep the battery compartment clean and dry; and the terminals, clean and tight, and well covered with vaseline to prevent corrosion.

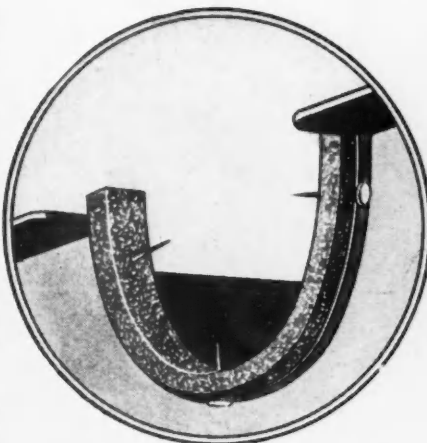
Flashlight Grip

A few turns of adhesive tape wound around the body near the switch aid



bearings caps are difficult to place accurately. If the gasket is not in line a serious oil leak may develop, especially at the rear main bearing cap.

A method of securing these gaskets in place while the oil pan is being bolted to the crankcase is given in Chevrolet News. Three large tacks are placed through the felt, with heads of tacks outside the pan. After the pan is in place the tacks are pried

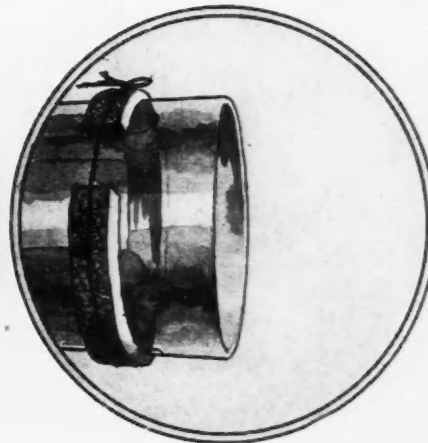


Holding gaskets in place by tacks

in holding it with greasy hands, according to Frank W. Bentley, Jr., Missouri Valley, Iowa. The band also serves as a shock absorber if the flashlight happens to drop on its side.

Anchoring Oil Pan Gaskets

Gaskets at the front or rear of oil pans which are in contact with main



Pre-forming gaskets to shape

loose with screwdriver and withdrawn.

Forming the gaskets to approximate curvature of the oil pan surface before placing them on the pan is recommended by Peter Seiboldt, Philadelphia. He finds that an ordinary tumbler is about the right size for this purpose. Gaskets are allowed to "set" to shape on the tumblers for 24 hours.

ALUMINUM BODY BOOSTS PAY-LOAD

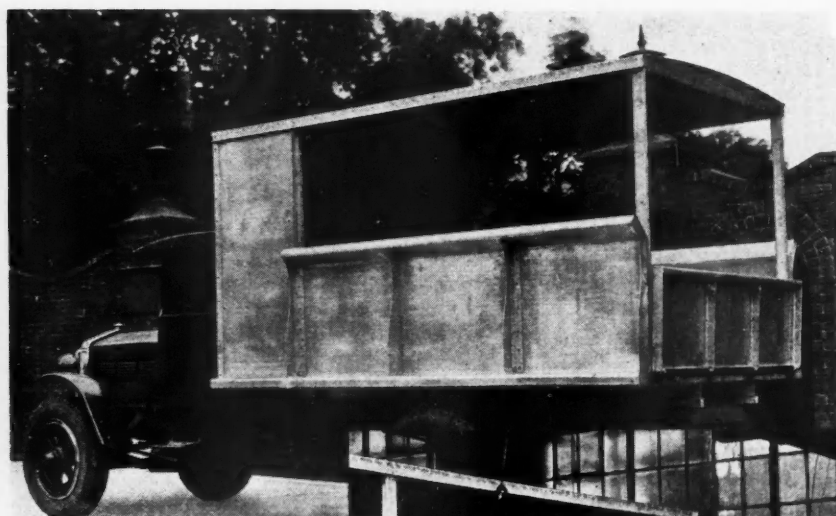
Increased Carrying Capacity and Operating Advantages Tend to Offset Higher Initial Cost

By James W. Cottrell

SINCE the 1926 convention of the American Railway Association in Atlantic City, when aluminum semi-trailer attracted crowds of curious operators, the commercial use of aluminum and its strong alloys in truck body construction has developed gradually until today the aluminum body is receiving the attention of the progressive element of the industry. Since that 1926 affair other semi-trailer bodies have been built of aluminum, and other types, including van, open express, covered express and dump bodies, have been placed in service. These are pioneering days but

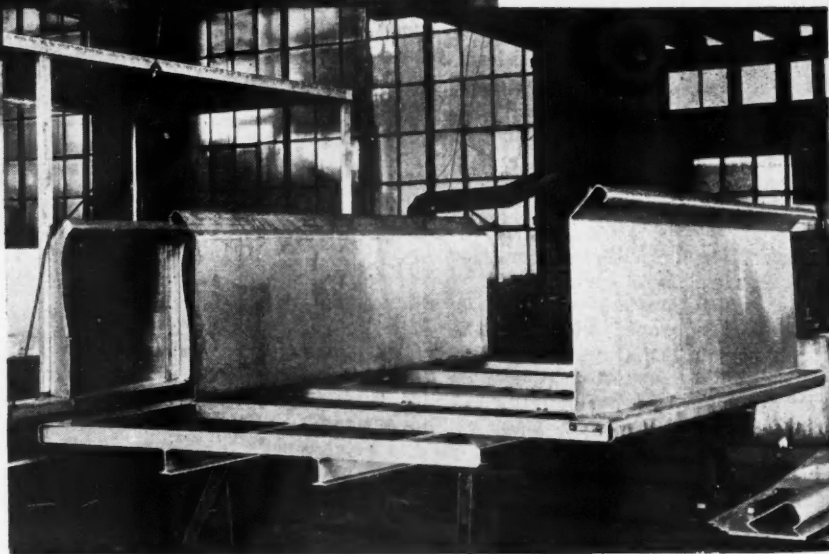
such progress has been made that the aluminum body deserves to be brought before truck makers, sellers and users as a very important development which the near future will see in even greater use.

The obvious fact that a saving in weight in a body may be added to the actual carrying capacity of a truck chassis is the chief reason for the interest which has been displayed in aluminum construction. In this regard you have the statements of builders and users of bodies of this type that aluminum-built bodies weigh about half as much as steel or composite bodies. In the heavy duty



This covered express body built for a grocer by the Auto Truck Equipment Co., Pittsburgh, weighs about 1600 lb., or 1700 lb. lighter than a similar job of wood and metal. Sides are higher than standard and there are two full height side panels at the front

Sub-structure comprises two aluminum I-beams with I-beam cross bars. Sides, flare and running board are a one-piece sheet bent to channel shape. Panels are single sheets and the front is assembled from three sheets. Four pillars support the roof



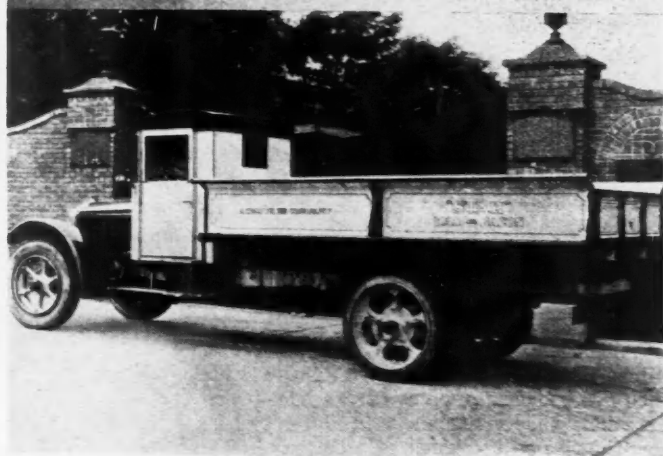


Aluminum alloy made it possible to design this insulated body to comply with state weight limitations. Balsa wood glued between aluminum panels and lining provides the necessary insulation needed for hauling dressed and frozen hogs. Built by Motor Haulage Co. for semi-trailer mounting this body is 25 ft. long, 7½ ft. high and 8 ft. high

Built entirely of aluminum alloy except floor by the Auto Truck Equipment Co., Pittsburgh, Pa., this express body saves about 800 lb. Inside dimensions are: 144 x 66 x 15 in., with 7-in. flares

field this saving is of value because legislation in many states imposes a limit on the gross weight of a vehicle which may be operated over the highways. From this maximum figure the weight of the chassis and body is deducted to determine the permissible pay-load. Every pound saved in the weight of the body adds one pound to the load which may be carried. There is a corresponding advantage in saving weight of bodies for use on medium and light capacity trucks, due to the fact that the net carrying capacity of the chassis is increased. For illustration, if 1000 lb. is saved in weight of a body a given load can be carried by a chassis of 1000 lb. less rated capacity, with a consequent saving in first cost.

(Turn to page 46, please)



AFTER

1929 Doubtless many of your friends have wished you a happy and prosperous New Year. "A happier and more prosperous New Year" is the way they ought to have put it. That's exactly how we feel about it, and if you'll pardon the slight tardiness, it is what we wish you in 1929.

We think the wish has a very good chance of becoming true because the entire truck industry is embarking on a business journey that should be more enjoyable and profitable than any in recent truck history.

If that were merely a personal belief, more likely than not we would have qualified the statement. But since manufacturers have been quite emphatic in their statements to that effect and since many dealers have committed themselves on paper to us that they expect a "good business year," the qualifiers are just so many orphans.

Yes, it's going to be a *big* business year. Competition is going to be keen, and the dealer who doesn't intensify his selling efforts and maintains safe and sane business methods, will live to refer ruefully to 1929 in the past tense: it was a good year—for the alert competitor.

And it's going to be a *good* business year, but in individual cases it will be only as good as the individual makes it. The dealer who lets volume run away with his profits will be balancing his books at the end of the year wishing there were a Santa Claus to buy up his trade-ins.

The dealer who resolves during 1929 to cut down the over-allowances, keep the nose to the grindstone, keep the eyes trained ahead and makes the old bean work overtime, will have turkey on the Thanksgiving table instead of pork chops.

Tires

Tires are so much a topic of interest in the truck industry today that they constitute a talking point the truck salesman should no more overlook than he would the rear axle or the transmission. There are as great differences in truck tires as there are in mechanical parts.

Since tire wear is an expense item to which every operator gives careful consideration, the salesman who doesn't know the tire on the truck he sells may, by his very inability to argue its merits



if the operator should ask some pertinent questions, set up enough dissatisfaction to divert the order to a better informed competitor. Efficiency and economy of operation are two items that the smart truck buyer wants the salesman to cover thoroughly, and the salesman who can't talk tires intelligently at such a time is plainly overlooking a very important point.

It is, of course, incumbent upon the tire manufacturers to furnish the salesmen with selling data, and after that it is the salesmen's duty to capitalize fully on the information.

Guesses

When we read of railroads supplementing their service with airplane transportation we can't help believing that they are actually profiting by their unhappy experience with buses and trucks.

When the bus was born and offered for adoption, the railroads, you will remember, treated it as if it were a far distant relative come to beg alms and booted it into the hands of independent

HOURS

operators who have done a commendable job of bringing it up. The railroads have, of course, lived to learn just how close a transportation relative the bus really is.

They treated the truck with little more show of kindness. Now they would (and they have been trying hard) stunt interstate operation of both truck and bus by restrictive legislation.

They guessed badly twice. Their third guess, it seems, favors their doing better by the infant airplane. It would be well if such were the case because if the airplane and the dirigible should eventually eat into long-distance railroad transportation revenues as the bus and truck have into the short-haul business, is it too awful to contemplate that the railroads might be left with not more than half a loaf, if not, indeed, with merely a biscuit?

Selling

One popular pastime among salesmen selling commercial vehicles is to pounce on a prospect with all fours the moment he lets it be known that he is in the market for transportation. The result is that on such an occasion an army of salesmen takes to the field and engages in mortal combat for the prize. Each salesman is in a hurry to land the buyer and in consequence probably not one gets a real opportunity to do a bang-up job of selling transportation. And from the general melee and confusion the prospect stands a good chance of emerging with exactly the size and type of truck least likely to keep him satisfied. It has happened many times.

Frequently this might be avoided by getting the prospect when he is not in the market. Then the smart salesman can make a detailed, careful study of the prospect's transportation requirements, and make an unhurried presentation of his product's story. There can be no question that the selling job then would be more thorough, more impressive and more conducive to ultimate customer satisfaction.

If the prospect doesn't buy, then or later, the salesman at least has the satisfaction of knowing that he overlooked nothing, that he did a top-notch selling job, and that factors beyond his control governed the prospect's decision.

for Economical Transportation



Another Chevrolet Achievement - the New Utility 1½ TON TRUCK



Greater Speed · 32% More Power
50% More Capacity · 7 inches
More Wheelbase · · · 4 Speed
Transmission · 4 Wheel Brakes

and
6 CYLINDERS



1½ TON
Chassis only

\$545

1½ TON CHASSIS
WITH CAB..... **\$650**

LIGHT DELIVERY
CHASSIS..... **\$400**

SEDAN DELIVERY... **\$595**

All prices f. o. b.
Flint, Michigan

OFFERING scores of vital advantages never before available in a truck priced so low, the new Chevrolet Utility 1½ Ton Truck represents the outstanding achievement of the world's largest builder of trucks!

The new six-cylinder valve-in-head engine develops 32% more power with correspondingly higher speed and faster acceleration. The 131" wheelbase—7" longer than before—provides full 1½ ton capacity with ample

room for mounting every conceivable body type. The four-speed transmission and four-wheel brakes assure maximum efficiency under every haulage condition, from gravel-pit work to high-speed city delivery. And it operates at as low a cost as its famous four-cylinder predecessor!

Ask your Chevrolet dealer for a demonstration. Learn how this remarkable new truck will do your work better and cheaper than any other truck you can buy!

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

- a Six in the price range of the four!

DIAMOND T SIXES

New Streamlined Stock Bodies in Attractive Colors and Lockheed Hydraulic Four-Wheel Brakes with B. K. Booster Equipment Distinguish the New Models

LOWNESS, streamlining, belting and color have been attractively combined in the new $1\frac{1}{2}$ and $2\frac{1}{2}$ -ton models just announced by the Diamond T Motor Car Co. These new models are attractively finished in lacquer with nickel and chromium-plating on head lights and cowl lights. Broad belt lines of contrasting colors circles around the Diamond T type enclosed cabs and on the panel job this band is carried around the entire body.

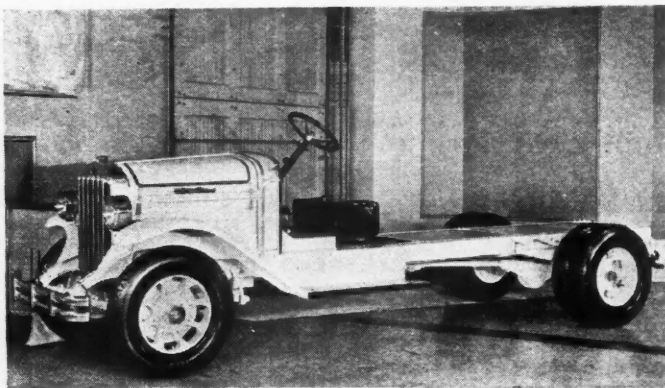
Equipped with six-cylinder engines, four-speed transmissions, hydraulic internal four-wheel brakes, these new models give Diamond T a complete range of trucks rated for 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4-ton loads, all powered by seven-bearing, six-cylinder engines, in addition to four-cylinder engined 5 and $7\frac{1}{2}$ -ton chassis with six-cylinder powerplants as optional equipment. A new series

of stock bodies of special designs also are furnished.

With the exception of the engine, rear axle and brake hook-up, the new $1\frac{1}{2}$ -ton Model 290 and the new $2\frac{1}{2}$ -ton Model 550 are similar but with units proportionately larger.

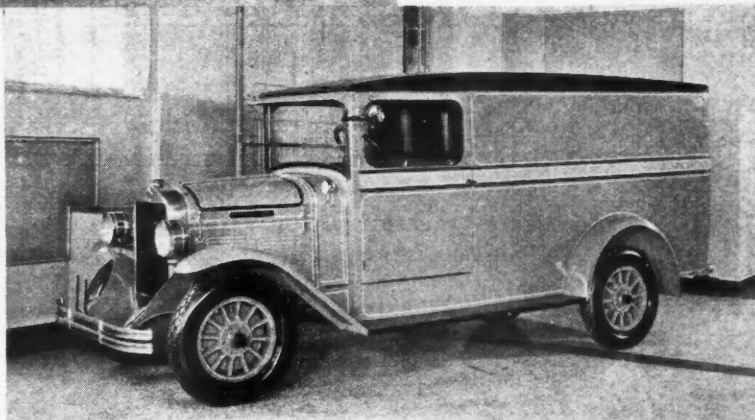
The engines are Diamond T Hercules and were designed to develop high torque and great power at low engine speeds. While Lockheed hydraulic four-wheel brakes are fitted to both models, the $2\frac{1}{2}$ -ton model is in addition equipped with B.K. vacuum booster equipment. A hand brake consisting of a 14-in. ventilated disk on the driveshaft is characteristic of both models.

Final drive of the $1\frac{1}{2}$ -ton model is through a bevel-gear, full-floating Columbia rear axle with a ratio of 5.12 to 1. The rear of the $2\frac{1}{2}$ -ton model is a semi-



Chassis view of the new $2\frac{1}{2}$ -ton Diamond T Model 550. Note dual rears, helper springs, radiator guard and front bumper

One-ton Diamond T Model 151 with de luxe panel body. Belting on line with top of hood and extension of body panels to running boards are responsible for the streamlining effect of this job



HAVE SMART LINES

Diamond T Models 290 and 550 Specifications

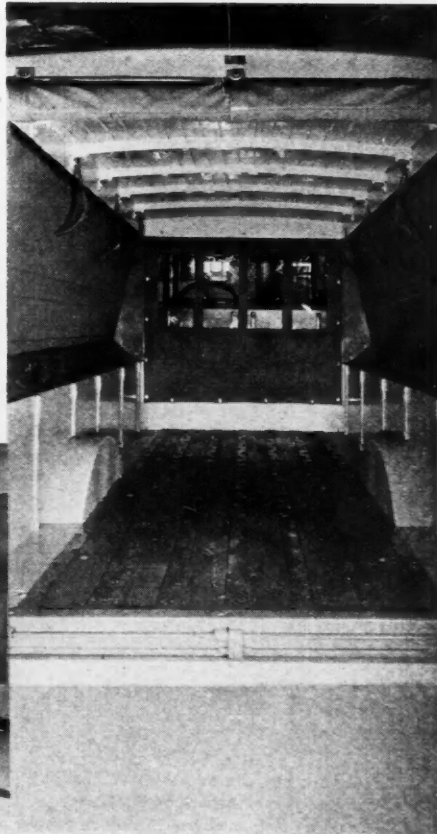
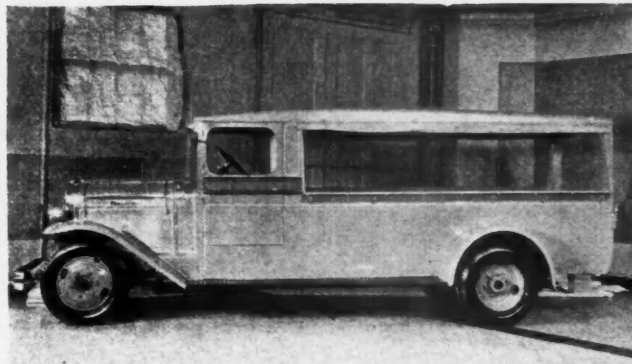
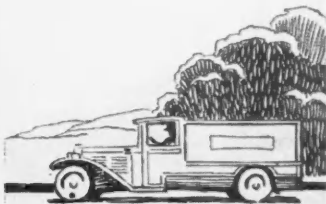
Model	Model 290	Model 550
Capacity	1½-ton	2½-ton
Price	\$1,475	\$2,195
Wheelbase		
standard	138½-156¼ in.	155-165 in.
Optional	168 in.	128½ to 183¼ in.
Weight, chassis	4150 lb.	5400 lb.
Tires	30 x 5 in.	32 x 6 in.
Wheels	Budd, disk	spoke type
Engine	Hercules Model WXA	Hercules Model WXC
Size	6-3½ x 4½ in.	6-4 x 4½ in.
Horsepower	54 at 2400 r.p.m.	74 hp. at 2400 r.p.m.
Carburetor	Zenith, gravity fed	Zenith, gravity fed
Governor	Handy	Handy
Radiator	G & O	G & O
Ignition	Auto-Lite	Auto-Lite
Generator and starter	Auto-Lite	Auto-Lite
Clutch	Covert, disk	Covert, disk
Transmission	Covert, 4-speed	Covert, 4-speed
Universals	Spicer	Spicer
Rear Axle	Columbia, bevel gear, full-floating	Clark, bevel gear, semi-floating
Ratio	5.1 to 1	7.12 to 1
Frame	Pressed steel, 6½ x 3 in.	pressed steel, 6½ x 3 in.
Steering	Ross, cam and lever	Ross, cam and lever
Brakes		
Service	Lockheed, hydraulic, 4-wheel	Lockheed, hydraulic, 4-wheel with B.K. vacuum booster
Hand	disk on driveshaft	disk on driveshaft

floating spiral bevel-gear drive Clark axle with straddle mounted pinion. Ratios are 6.37 to 1 and 7.12 to 1.

Standard equipment includes engine thermometer, heavy front fenders, air cleaner, speedometer, oil filter, oil gage, chrome-plated radiator guard, starter and bumper. New stock bodies include low stake, special furniture types, panel express with or without canopy top, panel delivery, high and low stake.

The Diamond T 1½-ton Model 151 has a lengthened wheelbase of 132 in. which permits mounting of an 8½-ft. body. The engine is a 3½ x 4 in. six, having 214.7 cu. in. of displacement and developing 61 hp. at 2900 r.p.m. The chassis design parallels that of the 1½-ton model with the exception that a three-speed transmission is used. Tires are 30 x 5 in. pneumatics on spoke wheels.

Interior of canopy top panel express body with side curtains down. Note the metal stripped floor and welded wheel housings. Diamond T 1½-ton Model 290 with canopy top panel express body. Effect of length is obtained by blending of hood and cowl with body and full length running boards



WHITE PUTS OUT 6

Offered in Two Wheelbases With Four-Wheel Hydraulic Brakes for Rapid Delivery Service

THE White Co. has added to its line a six-cylinder chassis for use in rapid delivery service. Designated Model 60 and rated to carry from 3 to 4 tons, the new chassis has a $3\frac{1}{2}$ by $4\frac{1}{2}$ in. L-head engine, 3-speed unit-mounted transmission, bevel gear semi-floating rear axle, four-wheel hydraulic brakes, pneumatic tires and is offered in two lengths of wheelbase, 138 and 157 in. Streamline appearance has been incorporated in the design of the engine compartment and cowl and the bodies of the panel, express and stake types which are offered with the chassis.

A seven-bearing crankshaft is employed and this part is balanced both statistically and dynamically. Force feed lubrication supplies main and connecting rod bearings, camshaft, piston pins, accessory drive and chain idler bearings. A gear-type pump, driven by vertical shaft, forces oil to a gun-drilled manifold in the crankcase and from there to the

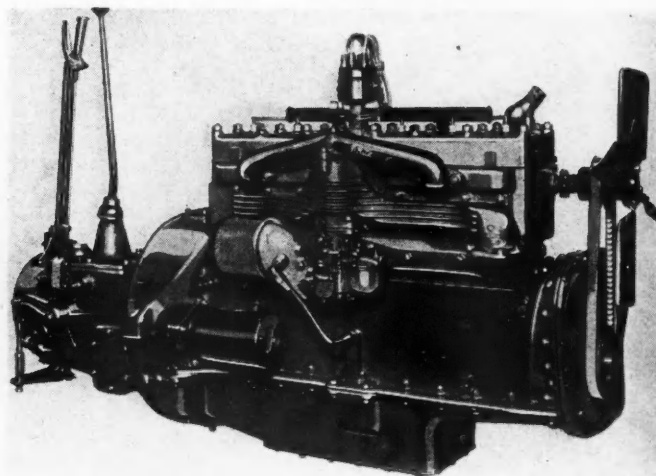
various bearings through drilled passages. Piston pins are lubricated through holes drilled in the connecting rods. All oil after passing through bearings drains back into a special reservoir cast in the aluminum oil pan and then passes upward through a fine mesh screen.

Camshaft is machined from a drop forging with cams and bearing surfaces ground and runs in four bronze bushed bearings. A silent chain is used for driving the camshaft and the accessory driveshaft, an idler sprocket of the spring loaded type maintaining tension.

Connecting rods of I-beam section are of the direct babitted type.

Pistons are of aluminum alloy constant clearance design with double Invar struts and with four rings fitted above the pins. Piston pins are full floating, retained by a snap ring and are lapped to fit in the diamond-bored bushings. Connecting rods are diamond-bored.

The clutch is of single plate design operating in oil and is completely enclosed. The driven plate is slotted to prevent warping. A ball throwout bearing is used and both it and the shaft bearings are lubricated by a special circulating system.

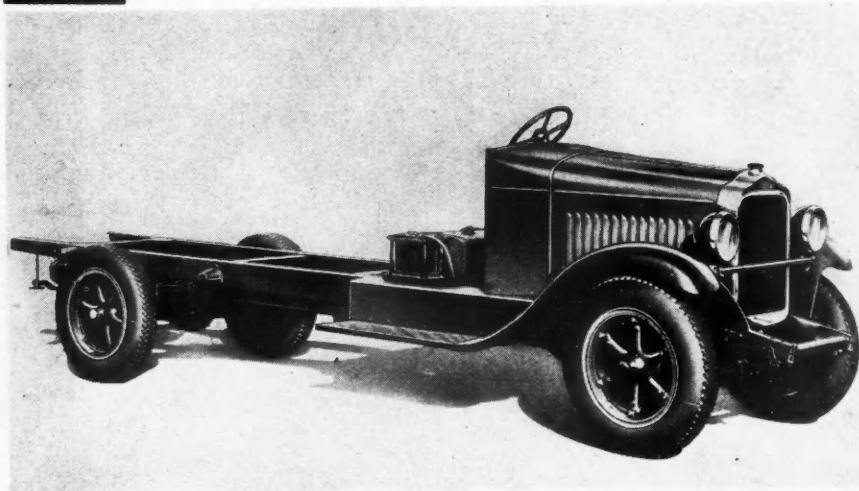


White Six 2A1 engine showing down-draft intake manifold with exhaust heat about central riser. The pipe below the carburetor is for crankcase ventilation. The cylinder head is detachable and combustion chambers are machined

Both clutch shaft and main shaft of the transmission are mounted on ball bearings. All countershaft gears are combined in one forging rotating on a fixed countershaft on roller bearings.

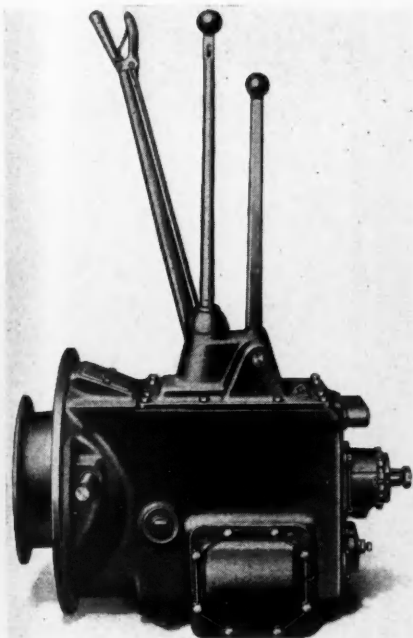
Model 60 is designed to carry 6000 lb. on 30 x 5 tires and 8000 lb. on 32 x 6 tires.

Front axle is of the reverse Elliott type with king pin mounted in bronze bushings with a combination steel and bronze thrust mounting. The rear axle is of the single reduction type with the pinion mounted in a separate housing with adjustable taper roller bearings. The differential assembly is carrier mounted and an adjustable set screw is included to prevent deflection of the ring gear under severe loads. Axle shafts have splines at (Turn to page 58, please)



Radiator, hood and cowl of the new White Six are streamlined. Springs are semi-elliptics, the front springs being shackled at the front. A tubular cross-member is clamped between the forward ends of the frame side members

BROWN-LIPE OFFERS HIGH-SPEED REVERSE



New Five-Speed Transmission in Three Designs is for 2½ to 3-Ton Trucks

Left: The high-speed reverse gear assembly is attached to the plate on the side of the case. A standard S. A. E. power take-off opening is provided on the other side.

Below: Four shifter bars are used in the control assembly of the Brown-Lipe five-speed transmission with two reverse speeds

Bottom: Low and high-speed reverse gears of the Model 51 five-speed transmission. High-speed reverse is engaged by shifting the two gears shown in lower center

second speed gears on the counter and main shafts. An interlock makes it impossible to shift either of the levers unless the other is in neutral.

Roller bearings are used on the countershaft and the rear of the mainshaft, the latter being a double bearing. The clutch shaft is mounted on a ball bearing.

Ratios of the various speeds of the three transmissions follow:

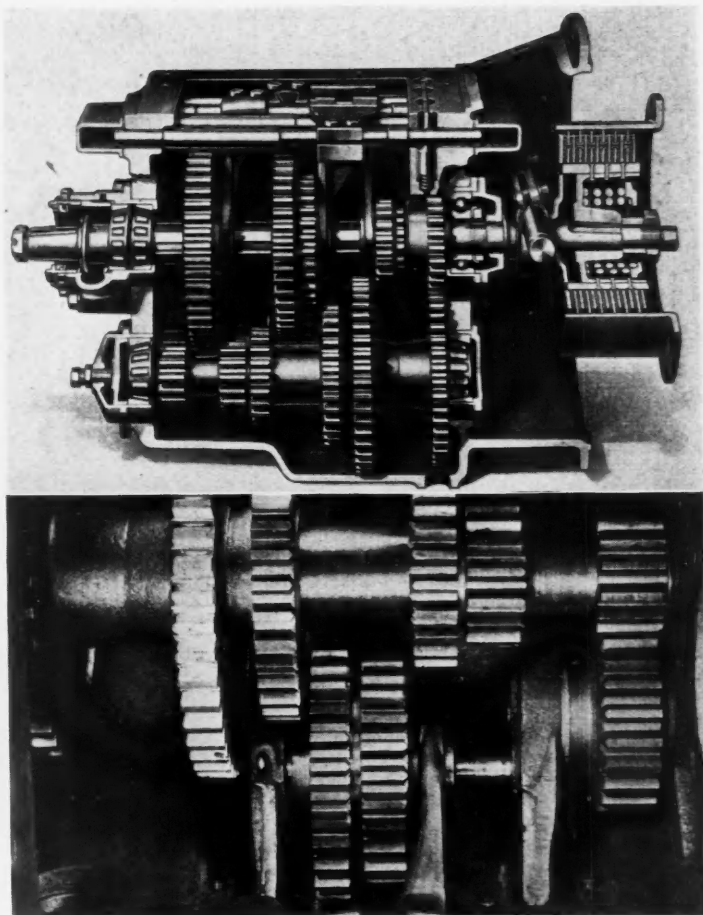
	959 XX	975 XX	986 XX
High reverse	3.48 to 1	4.34 to 1	none
Low reverse	7.45 to 1	9.26 to 1	7.45 to 1
1st speed	5.96 to 1	7.41 to 1	5.96 to 1
2nd speed	4.00 to 1	4.97 to 1	3.72 to 1
3rd speed	1.80 to 1	3.08 to 1	1.80 to 1
4th speed	Direct	1.74 to 1	Direct
5th speed	.74 to 1	Direct	.74 to 1

A HIGH-SPEED reverse gear and five forward speeds are features of the new Model 51 transmission now in production by Brown-Lipe Gear Co., Syracuse, N. Y. These units which are intended for use in trucks of 2½ to 3-ton capacity are made in three designs, each to fill a particular requirement in the truck field. One design has over-drive on fifth speed and two reverse speeds, another is direct in fifth and has two reverse speeds and the third has over-drive in fifth speed and one reverse.

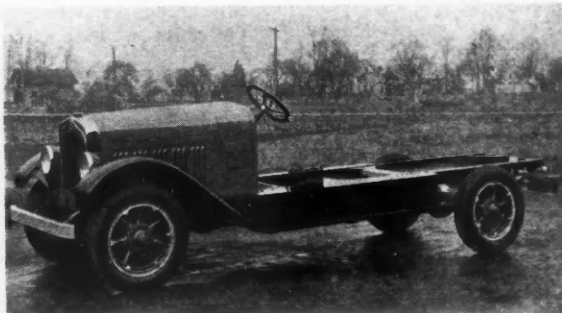
The design with over-drive in fifth and two reverse speeds, designated 959 XX, is intended for use on road-building trucks. The over-drive gives high speed when traveling without load and the high speed reverse, which is faster than second speed forward, enables the truck to back out of one-way stretches in about one-half the usual time.

For districts where road conditions are unsuited to the over-drive speed, the Model 975 XX is used, incorporating direct in fifth with four gradual step-ups and both low and high speed reverse gears. The third design, Model 986 XX, is adapted to fast express service, having over-drive in fifth speed and only one reverse.

A separate gear shift lever is used to engage the high speed reverse on the two models incorporating this feature. This lever shifts two integral gears on the reverse shaft into mesh with the



LARRABEE EFFECTS



Chassis of the 1-ton Model 20

Below—Hoods and cowls are designed for mounting coupe cabs as on this Model 40



Specifications of New Larrabee-Deyo Line

Model	20	30	40	50	60	70
Capacity	2000	3000	4000	5000	6000	7000
Wheelbase	143	143, 152, 161	143, 164, 176	164, 176, 183	166, 184, 195	184, 195, 205
Engine	Con 16C 3½ x 4½	Con 16C 3½ x 4½	Con 16R 4 x 4½	Con 16R 4 x 4½	Con 18R 4 x 4½	Con 20R 4½ x 4½
Carburetor	Zenith	Zenith	Zenith	Zenith	Zenith	Zenith
Clutch	Brown-Lipe Multiple Disk	Brown-Lipe Multiple Disk	Brown-Lipe Multiple Disk	Brown-Lipe Multiple Disk	Brown-Lipe Multiple Disk	Brown-Lipe Multiple Disk
Transmission	Brown-Lipe	Brown-Lipe	Brown-Lipe	Brown-Lipe	Brown-Lipe	Brown-Lipe
Speeds	3	3	4	4	4	7
Mounted	Unit	Unit	Unit	Unit	Unit	Amidship
Rear Axle	Columbia	Columbia	Wisconsin	Wisconsin	Timken	Timken
Type standard	Bevel gear	Bevel gear	Double reduction Bevel, worm	Double reduction Bevel, worm	Worm	Worm
Optional					Double reduction	Double reduction
Ratio	Optional	Optional	Optional	Optional	Optional	Optional
Steering Gear	Ross	Ross	Ross	Ross	Ross	Ross
Service Brake	Lockheed Int. hydraulic	Lockheed Int. hydraulic	Lockheed Int. hydraulic	Lockheed Int. hydraulic	Timken Duplex hydraulic	Timken Duplex hydraulic
Hand Brake	Disk	Disk	Disk	Disk	Disk	Disk
Wheels	Cast	Cast	Budd disk	Budd disk	Budd disk	Budd disk
Frame	5 x 3 x ¼	5 x 3 x ¼	6 x 3 x ¼	6 x 3 x ¼	8 x 3½ x ¼	8 x 3½ x ¼
Tires	30 x 5 heavy duty	32 x 6 heavy duty	32 x 6 dual rear	32 x 6 dual rear	34 x 7 dual rear	34 x 7 dual rear

INTERCHANGEABILITY of major units and of many parts features the new line of trucks offered by Larrabee-Deyo Motor Truck Co., Binghamton, N. Y. Production of the new line has been greatly simplified by this design and it also makes possible variation in specifications to meet individual needs with very little interference with regular assembly. In fact, Larrabee-Deyo

dealers are able to offer custom-built trucks manufactured on a production basis at a reasonable price, according to statement of the company.

The line ranges in capacity from 1 to 3½ tons, and a 5-ton unit of the same design will be announced later. Model designations and capacities are: 20, 1 ton; 30, 1½ tons; 40, 2 tons; 50, 2½ tons; 60, 3 tons; 70, 3½ tons.

New Line Consists 3½ Tons, All Have Engines. Heavier Hydraulic Timken Major Units and Interchangeable

Six-cylinder engines power the entire line, as might be expected of a pioneer user of sixes. Internal Lockheed hydraulic brakes are incorporated in all models and vacuum boosters are connected to the master cylinders on the models from 3-ton rating and upward. Disk type propeller shaft brakes operated by lever and pneumatic tires are standard throughout the line.

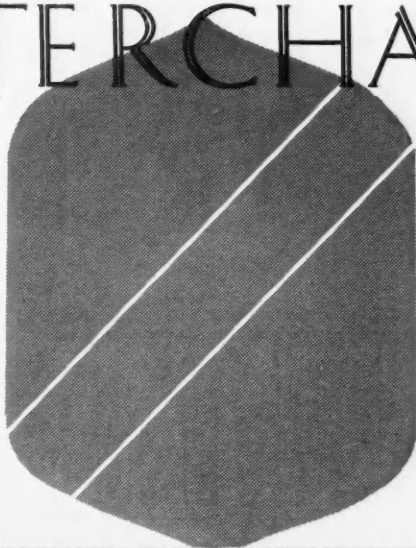
Continental engines are used, the 16C seven-bearing L-head 3½ by 4½ in. in the 1 and 1½-ton models and R series of overhead valve engines in the larger models. Four engines in the R series are interchangeable in chassis and any engine of the series may be had in any chassis from 2 tons up. Sizes regularly supplied are given with specifications of the various models.

Bevel-gear, double-reduction and worm-drive rear-axles are employed. Bevel-gear is used on the 1 and 1½-ton models, option of bevel, double-reduction or worm on the 2 and 2½-ton and double-reduction or worm on the larger units. Optional axles are interchangeable.

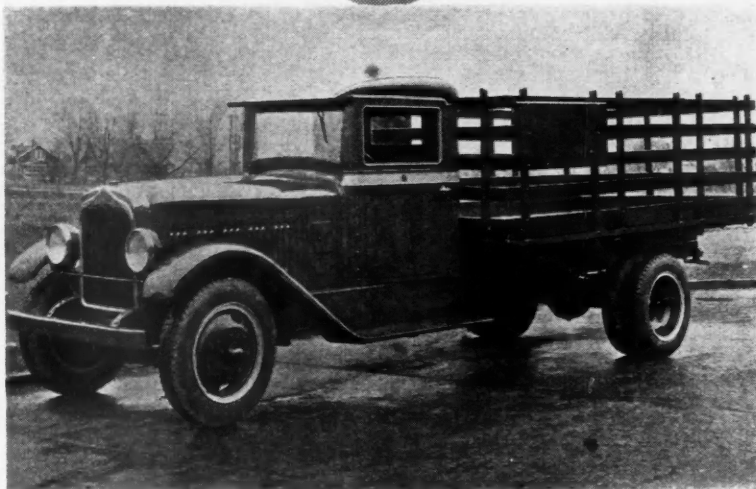
This idea of using units which have the same mounting dimensions for different models has been carried through to many of the parts. Further examples of the application of this feature of design are: Radiator shells and cowls of Models 20, 30,

UNIT INTERCHANGE

of Six Models, 1 to
ing Six-Cylinder
Models Have Hy-
Duplex Brakes.
Many Parts Are
ngeable



40 and 50 may be interchanged as may these parts of Models 60 and 70. Springs in the first group of models have the same width and length, the increase of capacity from 1 ton up being accommodated by greater thickness. Likewise springs of the 60 and 70 models have the same mountings. In this series spring hangers, shackles and pins are designed for Model 50. Fender crows, slip-hangers, brake and



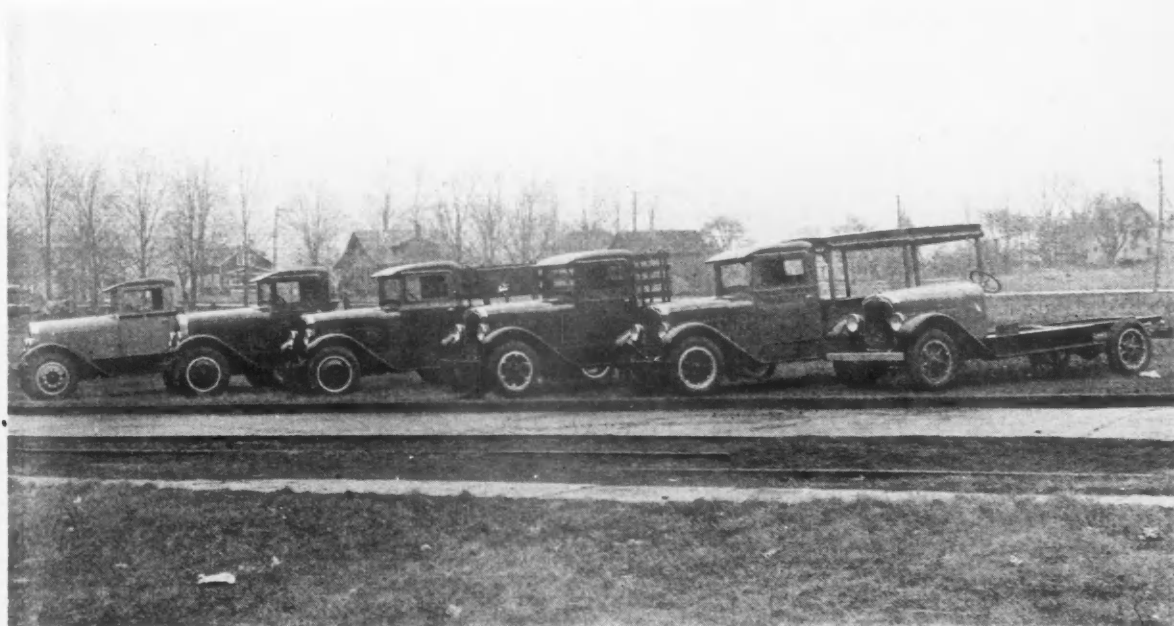
Model 50 chassis with coupe cab and stake body

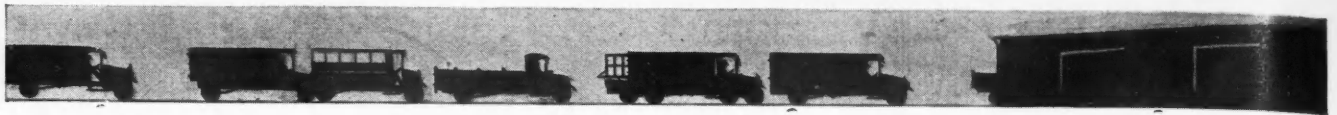
Below—Six models comprise the new line of the Larrabee - Deyo Motor Truck Co. From left to right the Models are 70, 60, 50, 40, 30, 20

clutch pedals are the same on all models. Drag-links on 20, 30, 40 and 50 are interchangeable.

In the entire line there will be only two radiator shells, two cowl,

two fender crowns, one step hanger, two rear spring hanger castings, one rear spring frame bracket, two front shackles, two rear shackles, (Turn to page 56, please)





NEW TRUCK SALES

Complete Figures for October, 1928,

	Acme	American La France	Atterbury	Autocar	Brockway	Chevrolet	Commerce	Diamond T	Federal	Ford	Garford	G. M. C.	Gotfredson	Graham Bros.	Gramm	Indiana	International	Larrabee	Mack	Pierce-Arrow	Relay	Reo	Republic	Schacht	Selden	Service	Sterling	Stewart	Studebaker	Whippet	White	Willys-Knight	Total Sales by Manufacturer		
ALA.....Oct.						866			39	382		86		148		9	132		11			24							2	12	33	1	1,781		
ARIZ.....Oct.						80				39		3		26			8				4								1	4	2		169		
ARK.....Oct. Nov.						282 70			4	150 83		19 6		33 8		5	45 15				9 5								1	4	3	6	3	500 194	
CAL.....Oct.	1			16		541	2	27	664	1	88		331				41		22		1	131	2				23	6	20	23	44	4	2,168		
COL.....Oct.						255			1	154		36		59			68		1			10								3	4		585		
CONN.....Oct.	1			12	6	192	2	5	155	3	32		80				28	8	30	1	3	73			1			13	8	8	14	2	689		
DEL.....Oct. Nov.				2		32 8				36 29	1	5 3		8 8			9 5		1 1		1 1		7 2							1	1	3		107 39	
D. C.....Oct. Nov.				1 10	2 1	84 23		3 13		69 84		7 9		10 5		1 1	4 2		1 6		1 2		9 10			1	3 1	1	1	2	4	9		294 180	
FLA.....Oct. Nov.					1	173 128			2 1	181 199		8 7		18 17		1 1	13 6		3 3			5 19								3	1	2		409 285	
GA.....Oct.				2		222			1	154		3		20		2	26		6			4							1	5	11		458		
IDA.....Oct.						50				29		4		21			15					1								1	1		128		
ILL.....Oct. Nov.	1		3 5			598 231		58 46	9 1	511 385		61 33	9 2	139 90		10 3	142 95		19 11	4 2		39 47				1 1	2 1	6 5	13 10	21 11	5 3		1,727 1,019		
IND.....Oct.						357		4	2	277		41		54		13	56		2	1		24						7	4	8	4	1	864		
IA.....Oct.						393		5	5	229		20		54		4	107		2			34								1	3		869		
KAN.....Oct. Nov.						240 56		2 3		165 101		31 8		63 14		1	70 22					16 3	1 1						4	2	3	2		694 212	
KY.....Oct.						202			2	122		11		38		6	29		3			13							2	11	6		440		
LA.....Oct.				1		188			2	173		21		33		2	44		1			6								7	4		484		
ME.....Oct.	1					130		3	1	88		6		34			23		4			22							2	1			319		
MD.....Oct. Nov.	2	1		9 7	3	153 51	1 2	3 2	2 4	163 154		24 16		27 31			27 17		17 12		1 1		21 13	2 4				3	7 2		3	4	5	1	461 330
MASS.....Oct.	1	2		44	13	348		9	16	320		86		186			78	3	56	11		110				2	14	10	10	3	34	4	1,382		
MICH.....Oct.	11			11		728		11	27	766		74	9	150	2	1	90		9	4		87	2						8	19	12	2	2,081		
MINN.....Oct. Nov.						370 159			4 4	319 293		26 18		66 41			136 71		10 5		1 1	46 11							2	8 2	9 6	1	1,007 613		
MISS.....Oct.	1					228				140		15		19			36			2			8	1							7		423		
MO.....Oct. Nov.				5		304 165		18 17	5 1	269 335	1	46 30		53 69	1	3 11	55 52		7 20		2		21 19	2				1 5	2	4	7 8	6 5	1	818 759	
MONT.....Oct. Nov.						238 56				62 41		25 5		36 20		4	120 40					22 5							1		2	1 3	4	580 170	

Figures in this table are compiled by R. L. Polk & Company, of Detroit, except Illinois, which is compiled by the Robinson's Advertising Service, of Springfield; and New Jersey, January, 1929

The Commercial Car Journal
and Operation & Maintenance

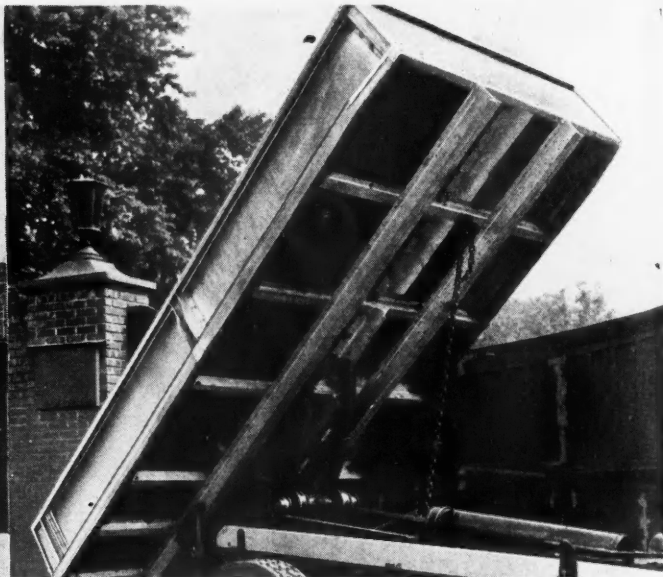
BY MAKES AND STATES

and Partial Reports for November

	Acme	American La France	Atterbury	Autocar	Brockway	Chevrolet	Commerce	Diamond T	Federal	Ford	Garford	G. M. C.	Goifredson	Graham Bros.	Gramm	Indiana	International	Larrabee	Mack	Pierce-Arrow	Relay	Reo	Republic	Schacht	Selden	Sevier	Sterling	Stewart	Studebaker	Whippet	White	Willis-Knight	Total Sales by States including Miscellaneous	
NEB.....Oct.						284		2		174		34		30		1	73		1				10					1		1	1	4		625
NEV.....Oct.						9				6		2		12			1						1									1		33
N. H.....Oct. Nov.					2	62 27			7 1	36 40		7 8		28 9			13 3		1 1	2		7 2						1 1	1 1		1	168 95		
N. J.....Oct.	1	5	2	32	21	422	1	7	31	302	1	53	3	152		2	30	2	46	15		80	1	3			7	7			36		1,329	
N. M.....Oct. Nov.						94 91				8 23		8 5		15 11		2	12 12					5 2							1 1	2 1		147 152		
N. Y.....Oct.	5	10	19	60	165	1,089		70	24	791	9	179		460			189	17	205	32	1	202	2	12	27	2	3	88	9	45	123	3	3,893	
N. C.....Oct. Nov.	8 3			1 10		388 292			1	284 224		20 11		69 52		3 2	29 16		6 2			19 11	4 6						1 1	3 7	5 2		862 648	
N. D.....Oct. Nov.						347 98			3	87 56		56 21		57 15			255 95					18 7	1						1 1	2 1		2 2	834 298	
OHIO.....Oct.	3			15	1	765		13	25	534	3	74	3	164	3	18	120		14		2	78	7	7	1		1	7	10	31	41	11	1,976	
OKLA.....Oct.						504		8	10	373		26		123		4	98		8			33				9			4		32	8	3	1,247
ORE.....Oct. Nov.						95 20			10 4	116 96		17 13		56 23			17 9		6 2			13 14	1 2						2 1	5 11		365 205		
PA.....Oct.	7	2	1	33	34	793	2	14	15	573	8	125	5	301		2	156	1	59	6	6	124	6				19	31	14	36	59	6	2,529	
R. I.....Oct. Nov.				5 4	1	65 30			6 1	49 66		23 11		24 21			10 9		3 2			18 17		2	1		3	1	1 1	3	5	1	224 166	
S. C.....Oct. Nov.						216 151			3 2	149 118		42 9		25 20		1 2	10 9		1 3			3 2	1						1 1	3 2		460 322		
S. D.....Oct.						113				66		7		20		1	92					10	1						1	1	1	1		316
TENN.....Oct.	1					201			13	87		30	2	39			42		12			8	2						3	2	7		449	
TEX.....Oct.				7		1,491			11	776	3	92		175		14	212		11		2	66							4	6	41	27	1	2,956
UTAH.....Oct.						62				53		6		22			16		1			1							2	3	1	1	169	
VT.....Oct.						37			7	37		6		21			21		6			9							4	1		3		152
VA.....Oct. Nov.		1		1 1	3 2	319 162		1	3	256 208		32 12		51 34		3 1	37 24		1 3	2 4	2 1	20 12	6 4					1 1	1 1	6 4	9 1		757 483	
WASH.....Oct. Nov.						132 44			4 1	108 79		1 1	17 8		41 20			29 7		6	1		36 13	1					1 1	1 3	8 6		406 200	
W. VA.....Oct. Nov.						138 47			4 3	72 80	2 1	18 9		61 39		9 4	46 18				1 1	20 11	1 1					1 4	1 1	6 2	2 1		382 230	
WIS.....Oct. Nov.						438 223		23 5	6 5	331 292		51 22		57 60		2	80 39		9 2	1 1	1 1	24 21					6 7	8 7	8 3	6 10	3 5	2	1,083 718	
WYOM.....Oct. Nov.						129 37				15 19		3 4		17 11		1	29 20		4 2			2 4								1			1	203 99
TOTAL.....Oct. Sales by Makes.	41	21	22	255	251	15,447	4	257	334	10,909	33	1,706	31	3,726	6	123	3,019	31	599	84	21	1,553	44	24	40	3	84	203	138	375	590	63	40,855	



Both the body and part of the lifting mechanism of this high-lift coal delivery body built by the Auto Truck Equipment Co., Pittsburgh, are of aluminum. A saving of 1800 lb. by the use of aluminum made it possible to increase the capacity of this body 1 yd. to a total of 7 yd.



This 3 1/2-yd. dump body made by the Auto Truck Equipment Co., Pittsburgh, and used by the Aluminum Co. of America, is, with the exception of the floor, entirely of aluminum. To note the relative wear of aluminum alloy and steel half the floor was made of aluminum alloy and the other half of eight-gage steel

ALUMINUM BODIES

(Continued from page 35)

From the operating standpoint, saving in weight, which is accomplished by the use of aluminum alloys in body construction, may be used to increase pay-load of the vehicle or to reduce the gross load which the engine is required to move. In the former case there is an increase in revenue of the vehicle and in the latter case there is a reduction in cost of operation or a betterment of performance. There may be an increase of performance, especially in hilly countries, which seems out of proportion to the weight involved. If the saving in weight permits a truck to make a hill in high gear which ordinarily is taken in second or third, it is obvious that time will be saved. The decrease in cost of operation and repairs which may be expected to follow a reduction in gross weight depends upon individual circumstances. However, it is an item which any operator can determine for himself without difficulty.

In addition to weight-saving there are two other advantages in the use of aluminum bodies. The first is that there is no need for painting and repainting. The second is that an aluminum body has a residual or scrap value of 15 to 18 cents per pound. In the case of one of the bodies described



This aluminum van used in long haul service weighs 2160 lb. compared with 3500 lb. for a conventional van. It is 14 ft. long, 7 ft. high and wide and cost about \$2,000

later in this article the weight is 2160 lb., which at, say, 16 cents per pound, gives a scrap value of \$345.60. Thus, whereas a metal and wood body may not be worth anything at the end of its period of usefulness, an aluminum body is always worth the prevailing price for scrap aluminum alloy. This value

that marked savings may be expected along this line. However, the basic metal aluminum and its alloys cost more than steel, and bodies made of the former metal may be expected to cost more than those made of the latter material. Operators who are using aluminum bodies evidently consider the advantages offset the additional investment.

Aluminum employed in body construction is, in almost all cases, an alloy of aluminum and other materials. These alloys, known as strong alloys, have approximately the same strength as steel of the same section. In fact, in designing body sub-structures the

(Turn to page 50, please)

SCHACHT ADDS 2-TON JOB

Has Six-Cylinder Engine, Four-Speed Transmission and Lockheed Four-Wheel Brakes and is Offered in Two Wheelbases, at \$1,850

DESIGNATED as the Champion, the new 2-ton, six-cylinder model just announced by the Le Blond-Schacht Truck Co., Cincinnati, has a road speed of 40 m.p.h., is offered in 160 and 174-in. wheelbases and lists at \$1,850.

The engine is a $3\frac{3}{8} \times 4\frac{5}{8}$ -in., six-cylinder Continental, having a displacement of 248.3 cu. in. and capable of developing 70 hp. It is suspended at three points and is cushioned by six specially constructed rubber blocks. Lubrication is full pressure. A centrifugal water pump, 18-in. fan and a rubber-mounted radiator comprise the 20-qt. capacity cooling system. The radiator core is of the fin and flat tube type, made of copper, and the outside shell is made of one piece, chromium plated. Ignition is by battery with Delco-Remy distributor. Fuel is fed by pump from an 18-gal. tank, located under the seat, to a Zenith carburetor.

Mounted in unit with the engine is a 10-plate, multiple-disk clutch and a four-speed Brown-Lipe transmission. The latter provides a reduction of 5.35 to 1 in low and direct in fourth speed. Main and countershafts are carried in Timken bearings.

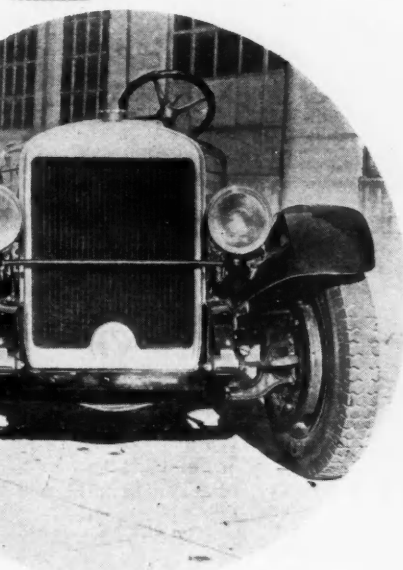
From the transmission power is carried back to the rear-axle through a

propeller shaft equipped with two Spicer universals and an S.K.F. self-aligning ball-bearing. The rear-axle is a full-floating, spiral-bevel drive Timken providing a final reduction of 5.83 to 1.

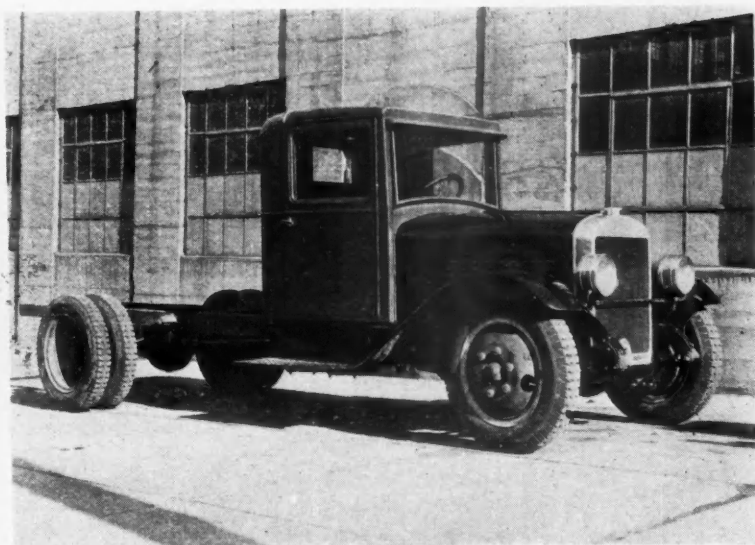
Lockheed four-wheel, internal hydraulic brakes are used, shoes expanding in $16 \times 2\frac{1}{4}$ -in. drums. The hand brake actuates an external band mounted at the rear of the transmission. Steering is by Ross cam and lever gear.

The frame reinforced with four hot-riveted cross-members, is of pressed steel, 6-in. section, 3-in. flange and $\frac{1}{4}$ -in. stock. The semi-elliptic springs are alloy spring-eyes; nine leaves, $40 \times 2\frac{1}{2}$ -in., front; and steel with bronze-bushed 11 leaves, 50×3 -in., rear. Wheels are 7-in. Budd disks equipped with 32×6 -in. pneumatics, dual rears.

Standard equipment includes electric head and tail lights, starter, oil filter, air cleaner, bumper, speedometer, oil gage, ammeter, horn, etc. The cab is supplied at an extra cost of \$135. Specifications and weights follow:



Front view of the new Le Blond-Schacht Champion. Price, \$1,850, without cab



Chassis weight with cab	4500 lb.
Chassis weight without cab	4075 lb.
Max. weight, chassis, body and load	9500 lb.
Short Wheelbase	
117½ in. back of cab for 10-ft. body	
129½ in. back of cab for 11-ft. body	
Long Wheelbase	
141½ in. back of cab for 12-ft. body	
153½ in. back of cab for 13-ft. body	

A line of four new models, designated as the Cub series, has been announced by the Sanford Motor Truck Co., Syracuse, N. Y. Capacities range from $1\frac{1}{4}$ to 3 tons and each model is known by a letter making up the name of the company, S, A, N and F.

Le Blond-Schacht's new two-ton Champion is equipped with six-cylinder engine, four-speed transmission and Lockheed four-wheel brakes

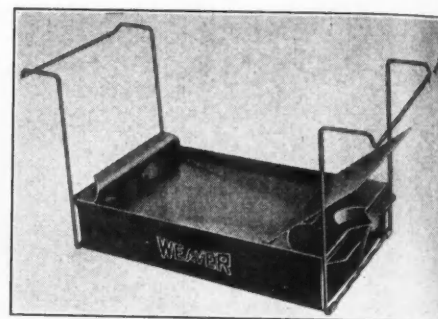
NEW PRODUCTS FOR

Accessories, Parts



Pressure Signal

The Tire Pop-Valve, distributed by the Tire Pop-Valve Sales Co., 709 Pontiac, Mich., comes in sets of four, providing pressures ranging from 32 to 110 lb. The valve signals when the proper pressure is reached, after which no more air can pass into the tire.



Drain Pan

This pan, adapted for use in lift, rack or pit, provides a convenient means of draining lubricant from crankcase, transmission, etc. It is made by Weaver Mfg. Co., Springfield, Ill. Hooks at either end are hinged at the base and may be extended to meet different widths. A drain plate is provided for draining crankcases and transmission having offset plugs. Capacity is 2½ gal.

Ignition Set

Thirteen units comprise the Q.D. Ignition Service Set offered by the Blackhawk Mfg. Co., Milwaukee: an offset handle, brace handle, screw driver handle, combination extension bar and T-handle, sliding bar, six double hexagon sockets from 5/16 to 5/8 in. and a screw driver socket. Packed in a 11 x 6-in. steel case. Price, \$8.70.

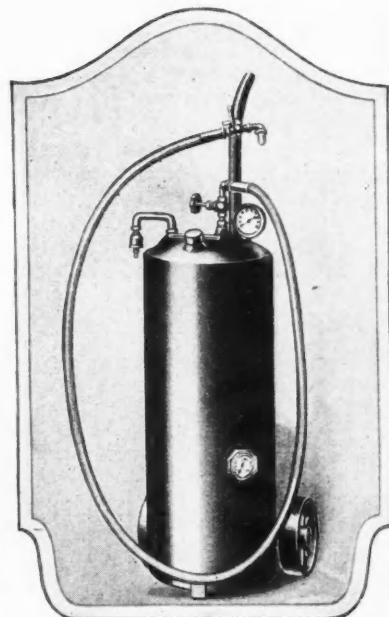


Disk Sander

The U. S. Sander, made by United States Electrical Tool Co., Cincinnati, is operated by a fan-cooled universal motor which turns 3,600 r.p.m. under load. Ball bearings are used throughout. Fine, medium and coarse nine-in. sanding disks are furnished. Weight, 12 lb. Price complete, \$85.

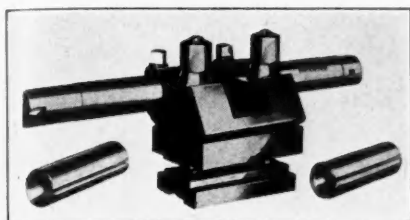
Brake Bleeder

Made by the Cardinal Mfg. Co., Dayton, Ohio, is for speedy bleeding of hydraulic brake lines and cylinders. The tank is brazed with riveted seams and is equipped with 7 ft. of ¼-in. discharge hose and a finger tip valve control. A standard Schrader valve and a pressure gage are also supplied. The valve is seated in a filter which separates moisture from air as it goes into the tank.



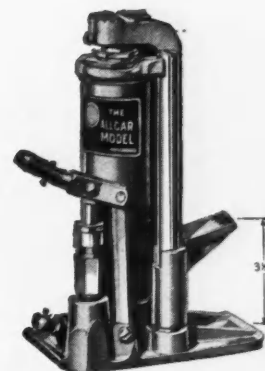
THE TRUCK MARKET

and Shop Equipment



Hydraulic Jack

This Allcar hydraulic jack of the Blackhawk Mfg. Co., Milwaukee, has a working range from 3½ to 16 in. and a capacity of 1½ tons on the head and ¾ ton on the toe. A 34-in., two-piece tubular handle operates pump and release valve. Net weight, 14½ lb. Price, \$12.90.

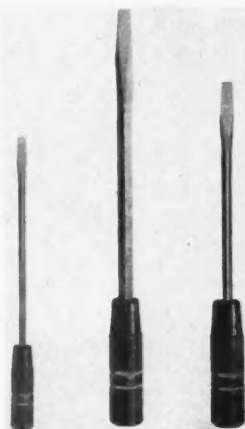


Brake Lining

All traffic brake lining made by Durwyllan Co., Inc., Paterson, N. J., is subjected to a special curing process to make it more resistant to wear, oil, water and grease. The lining is claimed to retain its appearance and physical properties when worn thin.

Screw Driver

Made by Fleming Machine Co., Worcester, Mass. Blade and shank are of hammer-forged steel. Handle is of compressed fibre, insulating the user against electrical shock and providing a grip that will not slip in oily hands. There are four standard sizes; three ignition type sizes, and three square shank sizes.



Lac-Kard Cable

Packard Electric Co. has developed a new cable known as Packard Lac-Kard. In this the rubber insulation is hermetically sealed by a braid and lacquered treatment, to protect the rubber from oil, grease and the corona effect resulting from high voltage current.

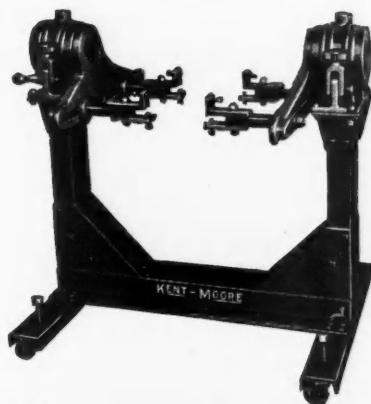


Welding Truck

This two-wheel truck for carrying welding equipment, product of the Oxxweld-Acetylene Co., 30 E. 42d St., New York City, is equipped with 24-in. steel wheels and has a continuous handle. A tool box is provided with a cover and a holder for extra blow pipe tips.

Boring Bars

These adjustable boring and turning bars, which can also be used for internal and external threading, are of one-piece construction and carried in large bearing surface holders, so designed to permit a long range of bar adjustment. The bars are furnished in several sets, large and small, to fit over tool post or into cross slides. Made by Scully Steel & Iron Co., Chicago.



Engine Stand

The U-16 Universal engine stand of the Kent-Moore Organization, Detroit, is a lighter edition of the company's Model U-99 stand with the exception of the gearing attachment. It is supplied with a portable base if desired. Large cupped set-screws are provided in the base cross-members for locking the stand securely to the floor. Engines can be completely revolved and locked into any position.

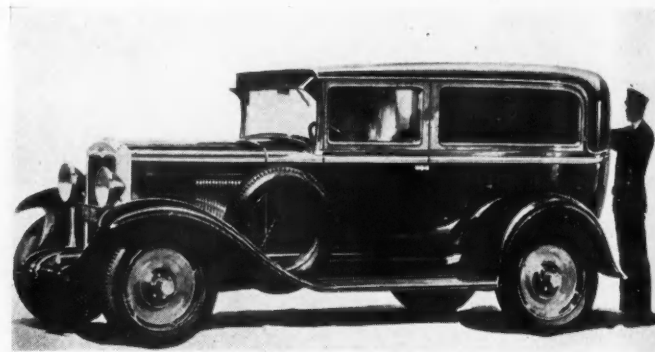
CHEVROLET ADDS SEDAN DELIVERY

INCREASE of capacity rating from 1 to 1½ tons, lengthening of wheelbase from 124 to 131 in., strengthening of frame and rear axle are among changes in the Chevrolet utility truck in addition to adoption of a six-cylinder engine previously described in these columns.

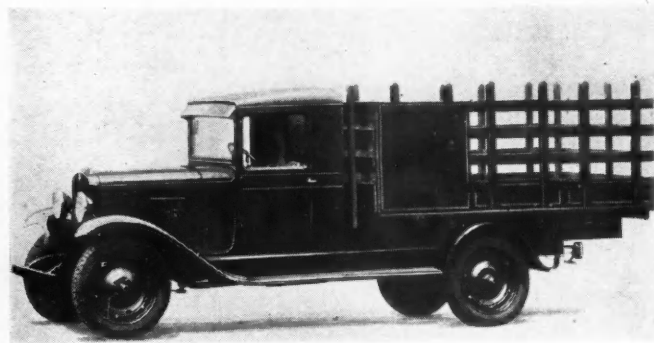
Permissible body length back of the cab is 108 in., this being 3¼ in. more than formerly. The frame is longer and heavier, the side rail flanges having been widened ½ in., and the cross-members are stronger.

A cab is supplied for the 1½-ton chassis, but the maker does not manufacture bodies for this chassis. The new cab has an integral cowl and instrument panel. Price, chassis without cab, \$545; with cab, \$640.

A sedan delivery model, shown in one of the illustra-



The sedan delivery body mounted on the light delivery chassis is modeled on the lines of the new passenger car bodies



Disk wheels are standard equipment on the new 1½-ton chassis. Cabs, but not bodies, are provided for this model

tions, is offered on the light delivery unit. This model is designed on passenger car coach model lines with rear windows blanked out and a rear door added. List price, \$595.

Following are body mounting dimensions for 1½-ton model:

Front of dash to center of axle	101 13/16 in.
Back of cab to center of axle	51 1/4 in.
Back of cab to end of frame	86 3/8 in.
Tread	56 in.
Overall length	187 1/2 in.
Max. body width between fenders	45 7/8 in.
Max. load. space back of cab (two-unit body)	108 in.
Max. load. space back of cab (one-unit body)	116 in.
Chassis shipping weight	2350 lb.
Chassis and cab shipping weight	2680 lb.
Total gross allowable weight incl. body and load	7000 lb.

Interstate Carriers are Subject to State Insurance Laws

(Continued from page 29)

the restrictions of state or federal constitutions. The court held that the police power of the state is sufficiently broad to require provisions for the safety of its citizens even of interstate carriers. (8) The contention of the carrier that the municipal ordinance requiring an indemnity bond from an insurance company authorized by the state to issue such bonds was held not unduly discriminatory, since any insurance company of sufficient standing to assure protection of its bonds might be licensed by the state.

Insurance or indemnity bonds have come to be accepted means of establishing the responsibility of individuals or corporations to assume their liability for loss or damage to property or persons as such loss or damage may occur in connection with their service of carriers of goods or persons for the public. Reasonable regulations of states with respect to the establishment of responsibility through indemnity bonds or policies of insurance appear to be wholly consistent with the police power of the state to protect the welfare and safety of the public, and, so far as such

requirements do not constitute an unreasonable burden or an obstacle to interstate commerce, they appear not to be unconstitutional.

(1) Operation and Maintenance, December, 1928.

(2) May 31, 1927, 274 U. S. 554.

(3) Sections 614-94 and 614-87, Ohio Motor Transportation Law as amended.

(4) 267 U. S. 307.

(5) 267 U. S. 317.

(6) 266 U. S. 570.

(7) 274 U. S. 352.

(8) 198 Ind. 563, 153 N. E. 504.

Aluminum Body Boosts Pay-Load

(Continued from page 46)

engineers of Auto Truck Equipment Co. use structural shapes of the same size and section of aluminum alloy as that of steel.

Structural shapes of aluminum alloy are both rolled and formed by a process known as extrusion. In this process the metal while heated is forced through a die which has the form of the structural shape desired. The alloy comes from the die in a continuous strip which is afterward cut into

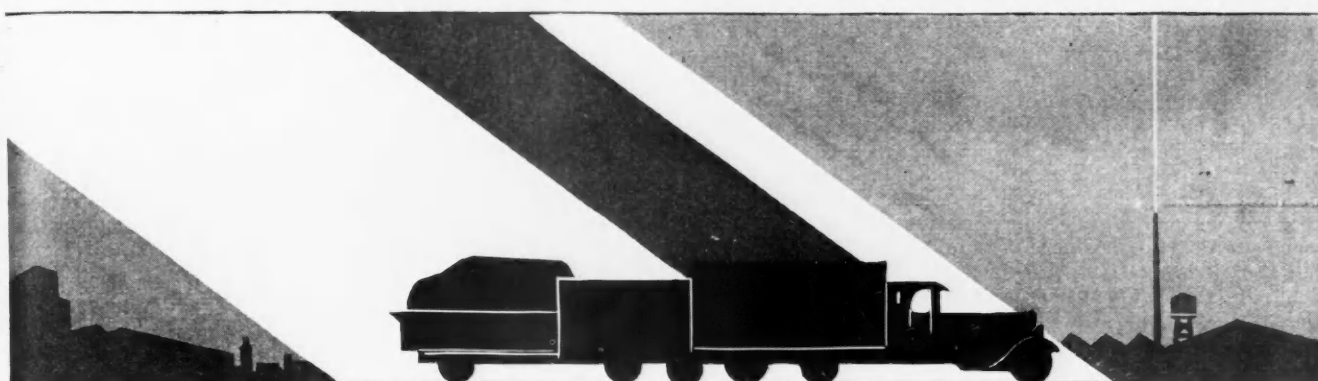
pieces of desired length.

This process makes it possible to form aluminum alloys in shapes which are not ordinarily available in steel. Some of these forms have been used in the bodies here described. For illustration, the rear pillars of the grocery bodies previously mentioned are of a special shape, somewhat like a capital letter E with the center projection removed. An oak strip is driven into the pillar from one end and this strip, in addition to reinforcing the pillar, also provides a place for attaching hooks or brackets after the body is assembled.

The question whether or not aluminum bodies will stand up in service is in the minds of many who are interested in the subject. Information is not at hand on which a calculation of the useful life of an aluminum body may be based. The first semi-trailer body put in service by the Motor Haulage Co. of Brooklyn early in 1926 is still in every-day service and, according to Vice-president Lyon, it is in excellent condition. The only repairs required so far have been due to one traffic accident.

The fact that Motor Haulage has put in service two more aluminum bodies after a thorough try-out of the idea speaks for itself.

TRUCK INDUSTRY



N E W S

Hahn and Selden Merge, But Lines Continue

Merger of the Hahn Motor Truck Corp. and the Selden Truck Corp., according to an official announcement, has been effected to centralize control, to bring about greater distribution by opening new territories and to expand the sales and service of the two companies. Under the plan Hahn and Selden trucks will retain their identity but manufacturing operations will be carried on in the Allentown plant, the Selden plant in Rochester being used only as a warehouse and service department. Body and cab production will also be centralized at the Hahn plant. Founded in 1900 at Hamburg, Pa., by W. G. and A. G. Hahn as a carriage and wagon business, the Hahn company graduated to truck making in 1908, and in 1926 the Hahn business merged with Bethlehem Motors Corp., of New York, and the Lehigh Co., of Allentown, becoming the Hahn Motor Truck Corp. The company has a modern plant with 175,000 sq. ft. of manufacturing space.

Stewart Makes Improvements

The Stewart Motor Corp., of Buffalo, announces that several improvements in engines on its 2½-ton Model 18X, 3-ton Model 19X and 4-ton Model 22 have increased power approximately 10 per cent. Use of counter-weights on the crankshaft is one of the changes.

Summers Succeeds Hanson

Thomas B. Summers succeeds H. C. Hanson as manager of the truck and bus department of the Fisk Tire Co. Mr. Hanson has been advanced to manager of another department.

Betts-Curtis to Make Trucks

A new truck and bus manufacturing concern has been incorporated in Long Beach, Cal., under the name of Betts-

Curtis Co. and a capitalization of \$1,000,000, according to John H. Betts, who heads the new corporation. Present plans provide for the production of 3½ to 5-ton four-wheel trucks and a 34,000-lb. six-wheel type, assembled from standard parts. A new method of spring suspension and engine mounting will be built into the trucks. The factory is located at 1225 West Ocean Blvd.

Chevrolet to Make 1,250,000

W. S. Knudsen, president and general manager of Chevrolet Motor Co., has outlined plans for a production of 1,250,000 cars and trucks in 1929.



Oliver W. Hayes, 43-year-old president of the Republic Motor Truck Corp., died Christmas of meningitis. Mr. Hayes started in the industry with Chevrolet, but left in 1913 to join the Republic Co., where he quickly rose to the position of president

Motor Truck Club Favors Six-Wheel Trucks

Opposition to the imposition of a gasoline tax in the State of New York and the enactment of compulsory motor vehicle accident insurance laws are included in the 1929 program of the Motor Truck Association of America, according to an outline given by Theo. P. Pratt, manager of the association, at its annual meeting. The association also went on record as favoring six-wheel trucks for heavy loads instead of four-wheel vehicles as a move to reduce the axle load on highways. E. P. McDowell, transportation manager of the Hecker-Jones-Jewell Milling Co., was reelected president of the association. Other officers elected: Vice-presidents, Herman Irion, Steinway & Sons; Roderick Stephens, Stephens Fuel, Inc., and Joseph Husson, Eleto Co.; secretary, C. M. Billings, Vacuum Oil Co., and treasurer, Nat Mallouf, Mallouf Haulage & Maintenance Corp.

Ruggles Parts Prices Cut

Ruggles Motor Truck Co. has announced to the trade and owners that Ruggles parts can be obtained at reduced prices by reason of added equipment and increased facilities in its new factory in Flint, Mich. Instead of printing new lists of parts special letters are being used. These letters will be sent out from time to time as changes occur, according to the announcement.

Nelson Cast Steel Wheel

The Michigan Steel Casting Co. is working on a new type of cast steel truck wheel for use with pneumatic tires. The wheel will be known as the Nelson wheel, having been designed by E. A. Nelson. L. L. Kinseler, formerly of the Erie Malleable Co., is in charge of sales development work.

Ford Brings Out Panel Delivery Model

A panel delivery model, listing at \$615 and a taxicab, listing at \$800 have just been added to the Ford line. The company also has effected the following price increases on its line of commercial cars: Model A chassis from \$325 to \$365; pickup with open cab from \$395 to \$455; and pickup with closed cab from \$445 to \$495. To accommodate requests for bevel-gear axles, the Ford company is producing a limited number of its 1½-ton trucks with such axles, some of which have already gone forward to dealers. Worm gear axles, however, it is reported, will continue to dominate the company's truck production.

The following items are also included in the present list of equipment and supplies distributed by the Ford company to its dealer: Well fenders retailing at \$8.25 each, fittings extra; spare wheel and tire lock, \$3; spare wheel lock for well fender equipped truck, \$5; tire gage, \$1.50; spring covers, \$4.25.



Beecroft Bendix Executive

David Beecroft, formerly vice-president of Chilton Class Journal Co., has been named vice-president of the Bendix Corp., with offices in New York.

Mr. Beecroft recently rounded out 25 years of service in the automotive business paper field.

Larrabee Dealers Discuss Sales

Dealers of the Larrabee-Deyo Motor Truck Co., who met at the Binghamton factory in annual convention, were treated to a very interesting program arranged by Fred R. Bump, general manager, and Frank T. Macey, treasurer. In addition to announcement of the new Larrabee line, sales, distribution, financing and merchandising methods were discussed. Among the speakers were C. W. Decker of the Farmer & Ochs Co., who spoke on "Time Payments"; former Senator Elwood M. Rabenold, and Alfred Reeves, general manager of the N.A.C.C., who talked on the future of motor transportation.

Lawrence European Representative

John V. Lawrence has been appointed European representative by Alvan Macaulay, president, National Automobile Chamber of Commerce. He will represent the chamber at international highway transport meetings which are being held at frequent intervals in Europe.

Over-Night Garage for Truckers

James Simpson, president, Pennsylvania Transfer Co., Pittsburgh, announced the completion of a new fire-proof truck garage and the inauguration of a new service for the accommodation of long distant operators spending the night in the city. The building provides quarters for both drivers and trucks and is located on South Main St. on the Lincoln and William Penn Highways. It has storage space for 60 trucks in addition to the company's fleet of 30 units.

Slabach Fisk Ad Chief

A. W. Slabach has become the new head of the advertising department of the Fisk Rubber Co., succeeding Mabel G. Webber, resigned. Miss Webber, originator of the slogan "Time to Retire," had been with the company 20 years. Mr. Slabach was formerly advertising manager of the Falcon Motors Corp.

Would Ban N. Y. Parking

Erection of large garages and the use of available plots of ground for parking purposes and the adoption of ordinances prohibiting all street parking in the congested areas, were measures recently recommended to Mayor Walker by the Automobile Merchants Association of New York, Inc., to relieve the New York traffic congestion.

Dodge Discards Graham Name

Trucks and buses built by Dodge Brothers under the name of Graham Brothers will, in the future, carry the name of Dodge Brothers, according to an announcement issued by Dodge Brothers, Inc. All units have always been powered by Dodge Brothers engines and for years built with Dodge Brothers parts.

Mahoney With Bendix

J. P. Mahoney has resigned as executive engineer of the Buda Co. to join the Bendix Brake Co. at South Bend. Mr. Mahoney has been with the Buda Co. in engineering capacities for the past 14 years.

Coming Events

SHOWS

Albany, N. Y.—State Armory...Mar. 19-26
Chattanooga, Tenn.—Hippodrome Jan.
Chicago—National, Coliseum Jan. 26-Feb. 2
Chicago—Palmer House, National Automobile Dealers Assn....Jan. 28-29
Des Moines, United States Good Roads Association.....May 28-June 1
Detroit, Mich.—Convention Hall...Jan. 19-26
Harrisburg, Pa.—Shaffer Bldg....Feb. 2-9
Mankato, Minn.—Mankato Armory, Feb. 13-16
Minneapolis & St. Paul—State Fair Grounds.....Feb. 2-9
Omaha, Neb.—Cty Auditorium...Feb. 18-23
Providence, R. I.—Cranston St. Armory, Feb. 16-23
Quebec, Can.—Drill House.....Mar. 16-23

CONVENTIONS

Cleveland, Ohio—Cleveland Hotel...Jan. 16
Meeting—North Central Div. of Natl. Highway Traffic Assn.
Des Moines—United States Good Roads Assn. and Bankhead National Highway Assn.May 28-June 1

Commercial Car Specifications on Page 65

New Interstate Bus Bills in House

A new bill for Federal regulation of interstate motor bus traffic (H.R. 15621) has been introduced in the House by Representative Parker as a substitute for the previous bill (H.R. 12380). The new bill gives the Interstate Commerce Commission jurisdiction over tariffs and rates for fares and provides for the issuance of certificates of public convenience and necessity to operators of interstate lines through the commission and joint boards set up in the various states affected. Bus lines in operation Nov. 1, 1928, will be given preferred status.

Ray F. Townsend has been appointed sales manager of the Brockway Truck Corp. Mr. Townsend was formerly assistant to the president of the Indiana Motor Truck Corp., and also associated with the Willys-Overland, Inc., and Federal Motor Truck Company.



Townsend Heads Brockway Sales

Gross Weight for G.M.T.

General Motors Truck Co. has adopted the gross weight method of rating its entire line of trucks, according to Paul W. Seiler, president. The ratings are the total gross weight of chassis, body and load. Mr. Seiler was host, Dec. 30, to 250 executives of his company and friends at a banquet held in the Hotel Roosevelt, Pontiac. Louis Ruthenberg, vice-president, presided as toastmaster. General Motors Truck Co. will spend \$2,000,000 for advertising and extension work in 1929 and is entering the year with a tentative production schedule of 36,000 units for domestic sales.

Farmers Favor Truck Marketing

Farmers show an increasing tendency to transport their products to market by trucks, according to Prof. A. G. Waller, of the New Jersey Agricultural Experiment Station. He said that New Jersey growers in particular are trucking a large proportion of their fruit and vegetables, and that during the four months ending with October 20,000 carloads of products were delivered by trucks to New York as against 55,000 carloads by railroads.

Auto-Lite Acquires Columbus

Electric Auto-Lite Co. has acquired control of the Columbus Auto Parts Co., maker of tie-rods and drag links for steering mechanism of motor vehicles, and will continue to operate the \$1,500,000 subsidiary under its present management, headed by R. E. Klages, of Columbus.

Road-sense

LESSENS

THE STEERING STRAIN ON THE DRIVER

THE REAL GOAL of steering is to make it possible for the average driver to handle his truck or bus safely and easily, under all conditions of road and speed. Naturally, every steering gear should give ease of wheel turn, for it is the most obvious of all steering advantages to the casual observer. Likewise, control of road-shock is sought, for it is also immediately noticeable when rough going is encountered. Yet equally important, though sometimes lost sight of in the effort to provide easy wheel turn or control of road-shock, is a third quality—"road-sense."

Road-sense is the inherent tendency of a steering gear to keep the front wheels to their true course—to automatically right slight deflections caused by obstacles in the road—to convey to the driver, by the feel of the wheel, a sense of the road which will permit him to steer sub-consciously, without mental effort.

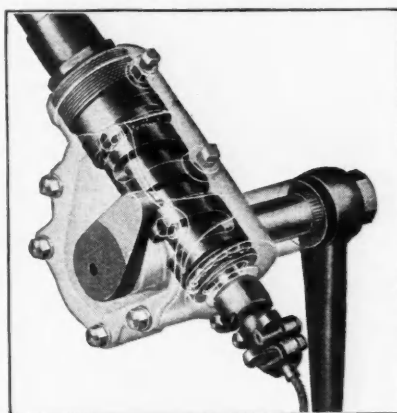
All steering gears should have road-sense. Without it, driving is a tiring, nerve-racking task. Imagine driving a truck or bus in which you had constantly to watch the road, and *consciously* make every steering correction because the steering gave you no idea of what direction the front wheels might be heading.

Yet there is a wide variation in the degree of road-sense possessed by different gears, and we know that in Ross Cam and Lever Steering it is present to a greater degree than in any other type of steering gear. As a result, driving strain and fatigue are considerably lessened in Ross-equipped trucks and buses.

Road-sense, ease of wheel-turn, and control of

road-shock are all natural qualities in the cam-and-lever principle. It has not been necessary to compromise any one of these qualities to bring another to the desired point. The result is perfectly balanced steering that *does* make handling a truck or bus easy, safe and sure under all conditions. We shall be glad to discuss with you in detail, the advantages of the cam-and-lever principle which have made Ross so widely preferred by makers of cars, trucks and buses.

ROSS GEAR & TOOL CO., Lafayette, Indiana



The balanced qualities of Ross Steering are largely the result of these features in which the Ross Cam and Lever Steering Gear differs from the other types of steering gears:

- Variable Ratio of Cam
- Line Contact Between Actuating and Actuated Members
- Low Internal Pressures
- Powerful Internal Leverage
- High Over-All Efficiency

ROSS *Cam AND Lever* STEERING

BIG BUSINESS

(Continued from page 15)

"Our confidence in 1929," he declared, "is best expressed in the addition to our truck plant, which is now in the course of construction, amounting to 310,000 sq. ft. of manufacturing facilities. I believe that in addition to increased sales abroad, there will be more commercial vehicles sold in the United States and Canada than in 1928."

A conservative opinion was entertained by Alex Legge, president of International Harvester Co., Inc. "The motor truck business will probably always fluctuate up and down in a rather direct ratio to the condition of business generally," he said. "At the moment we do not see any reason to anticipate any radical change in either direction."

Sales volume in the truck and commercial car field for 1929 should be unusually good, on the basis of reports from the world-wide dealer organization of Dodge Brothers, Inc., according to Howard E. Sneathen, director of truck and commercial car sales. The outstanding factors to which he points in support of this outlook are:

1. General prosperity shared alike by industrial and agricultural districts.
2. Stabilization of markets abroad, opening larger export possibilities.
3. Engineering and mechanical improvements of new models that represent attractive and significant departures from former accepted design.
4. The growing demand for fleets of trucks on the part of corporations and individual operators who realize the economy and dependability of motorized units for delivery and distribution.

"Paved roads and highway widening projects are constantly increasing the utility and profitable operation of the motor truck," Mr. Sneathen said. "Only a greater degree of truck consciousness on the part of the public remains to be developed to completely realize its possibilities. The ever widening scope of commercial car uses and continued general prosperity indicate that 1929 will be one of the best years in the industry's history."

While not looking upon 1929 as a boom year, C. A. Tilt, president of Diamond T Motor Car Co., said he believes that any organization with the right product and an intelligent and aggressive sales campaign will show a healthy increase in volume over 1928.

"As manufacturers," said Mr. Tilt, "we are giving to our dealer and branch organization for 1929 two new models in addition to our present line and we believe these new models will widen their selling field, and should result in

a further increase in business both for them and the factory.

"It is our opinion that the outlook for the light and medium capacity trucks is very good, but there is a decided falling off in the heavy duty demand unless this is met with six-wheel units."

M. L. Pulcher, president of Federal Motor Truck Co., looks to 1929 to be a very good year and feels that the result of the recent presidential election is going to make an even greater era of prosperity. In anticipation of a 1929 business increase Federal is planning to erect a two-story building, 400 ft. by 80 ft., part of which will house its export business which, according to Mr. Pulcher, "has grown beyond our ability to handle it in our present facilities."

"In regard to demand for light or heavy duty trucks, we believe," Mr. Pulcher declared, "the light duty truck is continuously going forward, and with pneumatic tires and the extra speed, it is replacing the heavy duty unit other than in a few vocations where a heavy duty truck only can be used because of its extreme load capacity which is tied up to that particular job."

Declaring that the industry as a whole is progressing to new high volume, Paul W. Seiler, president and general manager of General Motors Truck Corp., revealed that in 1929 his company "will launch a much more comprehensive and greatly increased sales and advertising program that we feel confident will contribute to the increase of our business in 1929 over 1928 of one-third to 50 per cent at least, carrying us, we believe, to a still higher position in the industry as a whole."

Watt L. Moreland, vice-president and general manager of the Moreland Motor Truck Co., Los Angeles, had this to say: "We anticipate about the same demand for trucks on the Pacific Coast in 1929 as has prevailed during 1928, with the sale of light trucks predominating."

B. A. Gramm, president and treasurer of Gramm Motors, Inc., entertained the view that there is no question regarding the prosperous outlook for motor truck business.

"Our American market for 1929 will be far ahead of 1928 and the vision 10 years hence is beyond belief," he said. "The truck will bring about the decentralization of industry; in other words, thousands of factories will move into smaller communities where costs of operation and production are much lower."

"The foreign fields have hardly been touched and will be a remarkable market for motor trucks."

"We look forward to a great increase

in the larger sizes. For instance, we believe the sale of 1 and 1½-ton sizes will be less in proportion and that the 2½ to 3-ton sizes will greatly increase."

"To prognosticate without producing facts and figures to back up certain statements may detract from my statement," said Hal T. Boulden, manager, commercial car division of the Pierce-Arrow Motor Car Co., "but omitting the charts and using cold, hard facts, as I see them, as a basis, there is no doubt whatever concerning the optimistic possibilities of the motor truck business outlook for the year 1929."

"Sales expansion is necessary—a different kind of salesmanship. And on this basis, we are planning our efforts for the coming year. Our biggest job is the development of the 'truck-minded' man—the seller of transportation machinery, if you please. This is a new and better way to make possible the profit side of the business for the man who measures up to the possibilities offered."

"Never before in my experience has such an opportunity existed as does today. Barring unforeseen contingencies, 1929 will show the greatest gain in the history of the business."

Standardize Liability Insurance

Representatives of motor freight firms operating in Texas have organized the Texas Motor Carriers' Association with the special purpose of standardizing liability insurance and establishing a uniform bond. It was decided at the organizing meeting that each operator should furnish a bond of \$500 and that insurance of \$10,000 be carried on each hauling unit as adequate protection for shippers. The plan, which is regarded as expressing the viewpoint of the shipper as well as carrier became effective January 1 among members of the association.

28 States Standardize Signs

Since standard signs for use on the United States highway system were adopted by the Joint Board of Interstate highways in September, 1925, 28 states have completed the marking of the system within their borders, according to the Bureau of Public Roads. The remaining states are still working on the system and are making progress. The signs are of two general classes—danger and caution signs, and standard route markers.

Predicts Good Rubber Year

That the coming year will be a profitable one for the rubber industry is predicted by F. R. Henderson, president of the New York Rubber Exchange. He based his opinion on the fact that "crude rubber is selling at close to cost of production, manufacturers are virtually cleared of their high-priced stocks and that consumption is holding up well."



The 1929 STEWARTS

**4 Ton
6 cylinder
4 wheel Brakes
\$4200 chassis Models**

3/4 Ton	
6 Cylinder . . .	\$895 Chassis
1 Ton	
6 Cylinder . . .	\$995 Chassis
1 1/4 Ton	
4 or 6 Cylinder . . .	\$1295 Chassis
1 1/2 Ton	
4 or 6 Cylinder . . .	\$1645 Chassis
2 Ton	
4 or 6 Cylinder . . .	\$1975 Chassis
Worm Axle . . .	\$2095 Chassis
2 1/2 Ton	
6 Cylinder . . .	\$2690 Chassis
3 Ton	
6 Cylinder . . .	\$3490 Chassis
4 Ton	
6 Cylinder . . .	\$4200 Chassis

All prices f.o.b. Buffalo

Sold and serviced by American LaFrance Branches in Boston, New York, Philadelphia, Baltimore, Pittsburgh, Chicago, Newark, Paterson, Easton, Elmira, Utica. By Wichita Falls Motor Co. Branches in Dallas, Houston, San Antonio, Wichita Falls, Tulsa and Oklahoma City.

By Stewart Distributors and Dealers elsewhere

**1 Ton 6 cylinder
4 wheel Brakes
\$995 chassis**



Stewart Sales are growing - grow with them!

1926 sales—41% ahead of 1925

1927 sales—45% ahead of 1926

1928 sales—53% ahead of 1927

Stewart sales are growing. There are many reasons.

Stewart has been for 16 years exclusively a builder of trucks. Stewarts are not built to meet low price competition — yet they're not high priced. A small factory profit per truck explains Stewart's moderate prices and quality.

Stewart owners do not figure depreciation on a 2 or 3 year basis. They know by experience that the average life of a Stewart is 5 years or more. There are thousands of 4, 6, 8, 10 and even 12 year old Stewarts in service in more than 600 American cities and 56 foreign countries.

The 1929 Stewarts are here. Powerful, finer, more rugged, more beautiful—the greatest Stewarts of them all — more value than ever.

Factory facilities have been enlarged to care for a greater production and more dealers. Grow with Stewart. Write or wire for details of Stewart's liberal franchise.

**STEWART MOTOR CORPORATION
BUFFALO, N. Y.**

Export Branch: 1 Broadway (Dept. 3) New York City
Cable Address, Stewartruk New York, Codes Bentley & Acme

Stewart

MOTOR TRUCKS

* Stewart Headquarters during New York Show,
Commodore Hotel, Rooms 1447-1449

STEWART TRUCKS HAVE WON BY COSTING LESS TO RUN

BODY KNOWLEDGE

(Continued from page 27)

backyard. Time after time at this point I have heard a salesman ask the prospect, "What kind of a body do you want?" That question is an open admission that the salesman is not on the job. He should already know what kind of a body is needed. If he were on the job he would not only know what type body was required, but could probably make suggestions to the buyer recommending certain body changes that would be an improvement over the present ones in use. But he cannot hope to talk intelligently when he admits his lack of knowledge of the customer's requirements.

It is very easy for a salesman to secure this information before calling on the prospect. For example:

Quite recently a firm wrote to a number of truck dealers to have their representatives call on it relative to the purchase of new equipment, and gave the name of the purchasing agent. Now there was one truck representative who, instead of calling immediately on this purchasing agent, went to the firm's shipping room, made himself known to the shipper, and explained he would like to find out just what merchandise the new equipment was going to haul, the distance traveled, weight of the average load, etc. Next he talked with the drivers and learned there were certain features in their present bodies and cabs they did not like. He found out in this particular case that the drivers wanted closed cabs instead of the open cabs then in use; that they preferred a single driver's seat instead of a full seat running across the width of the cab, and that they wanted a partition in back of the driver's seat cut in half so that the right-hand side would be open, allowing them to deliver the small packages from the front, in-

stead of getting out each time and going to the rear of the truck. With this information he went back to his office, drew up a rough sketch with specifications, found out the cost of building a body of this type and size, and then made his call on the purchasing agent. When their talk reached the body, he not only knew what the buyer needed but made suggestions (based on the advance information he had secured) that would eliminate some of the objectionable features of their old bodies, and showed such a knowledge of his subject that the order was given him for the new equipment.

There are some highly specialized businesses where a salesman will find a real difficult body problem that requires considerable thought. Here's one that came up several months ago. A potato chip manufacturer placed an order for a truck of 1½-ton capacity, and desired a body to carry 500 3-lb. cans of potato chips. He insisted on having a full panel body with cab, did not want a separate cab, and wanted good lines to the body.

Each can was 12¼ in. wide and 8½ in. high, and when filled weighed a little over 4 lb. The problem here was bulk, not weight, because the maximum load of 500 cans filled with chips would only weigh between 2000 and 2250 lb. A body was finally designed that met with customer's requirements both as to appearance and size, and in the designing every available inch of space had to be utilized. The wheel pockets on the inside of the body were built up square 8½ in. high from the floor, thus allowing the cans to sit evenly one row on top of the other. A dome type cab was built permitting cans to be packed in the dome, with the result that when the body was finished it had a total

loading capacity of 507 cans, seven cans more than required.

The salesman who interests himself in the customer's body problem is suddenly amazed at the vast amount of information he is acquiring about various vocations. He is building up an asset that will prove invaluable and the benefits he derives from this acquired knowledge will be manifold, and as he gets to know the proper type of truck body to suggest to the buyer he will automatically try and sell the proper size truck chassis. Just imagine a salesman, we'll say, calling on a wholesale meat packer who, instead of starting to talk truck chassis, makes his approach in this manner: "Mr. Smith, I ran across something interesting in your line of business the other day. Doe & Co., the big meat packers in New York, wanted to deliver meat over a territory of 150 to 200 miles and we built them a special body to carry 'Dry Ice,' the new refrigerant." Watch the reaction; he will immediately want to know more about this body, how it was built, did it operate successfully, what condition was the meat on delivery?

In fact, the way is opened up by the customer himself for the salesman to get on a personal basis that would have been impossible if he had approached him with the average sales talk.

Last, but not least, don't forget the advertising value of a well-designed body. Impress on the owner that his commercial body is equivalent to a traveling billboard; it is the point of contact between his place of business and the customer, and he is going to be judged by the appearance of his equipment. Besides his customers there are many people who may be future buyers that will be impressed with good-looking equipment. Big business houses throughout the country are devoting serious thought to this phase of the body question, and it will pay each salesman to bring this to the attention of the prospect.

Allowances

(Continued from page 21)

resold at a profit, a lower average allowance governed the profitable deals.

An analysis also seems to indicate that the amount spent in reconditioning a trade-in truck plays a part in making it profitably salable. The figures show that the average reconditioning cost per used truck resold at a profit in 1928 was 39 per cent greater than in the case of used trucks resold at a loss, and 24 per cent greater in 1927.

The table, a careful study of which is recommended, also reveals the following:

Better merchandising of used trucks in 1928, particularly of those resold at a loss. The percentage of loss per used truck resold at a loss was 17 per cent in 1928 as compared with 32 per cent in 1927.

An increase from 11.1 per cent in 1927 to 14.7 per cent in 1928 in the percentage of profit per used truck resold at a profit.

A decrease in 1928 over 1927 in the number of used trucks resold at a loss and an increase in those resold at a profit.

Larrabee Effects Unit Interchange

(Continued from page 43)

two starters, two distributors and one design of dash electrical equipment. Hydraulic brake equipment of Models 40, 50, 60 and 70 is interchangeable and corresponding parts of brake systems of Models 20 and 30 may also be exchanged. All heavy models are equipped with unit powerplant-mounted four-speed transmissions, but amidship

mounted seven-speeds are supplied at extra cost which does not include extra fitting or mounting.

Dual tires are standard equipment on models from 40 upward.

Optional wheelbases are supplied without extra charge, within limits shown in specifications, this being accomplished by using the longest wheelbase frame in production and cutting it down for shorter jobs. Twenty-five combinations of wheelbase are accommodated by 11 driveshafts.

Gasoline tanks are mounted in cowls, this construction being used because of low seat position in the coupe type cabs.

Panel, express canopy and stake bodies are offered for the models up to 2½ tons, and dump bodies and a large van on the larger models. Dump bodies are available also for the 1½ and 2½-ton models.

The Detroit Street Railway has Ordered 200

More Buses
and Specified the

Myers MAGAZINE OILING **System**



of Automatic Chassis Lubrication

Results Count: Do you suppose that Messrs. Smith, Hillicker and Murray of the D.S.R. insist on anything that doesn't produce results? Ask them for the results of 4 years use of this system on 300 buses even in the haphazard way it had to be applied to some of their buses, which were designed for grease lubrication.

The D.S.R. has tried every known method of chassis lubrication and the only system that has stood the test of service is the Myers Magazine Oiling System, and now every D.S.R. bus is equipped with it. Each bus is serviced *once in 10 days* (instead of every day, previously). It is done in *less than 12 minutes*. The chassis repair bills are *less than half*.

A 40-gallon tank near the servicing pits contains the oil. Air pressure on this tank (from the tire air compressor) forces oil into the Myers Oilers when the operator contacts a hose nozzle with the oiler. A few seconds not only fills the oiler but flushes out the bearing. Then the wick keeps the bearing con-

stantly supplied with oil until the next servicing. The wick filters the oil as it feeds. The servicing equipment is very inexpensive and its maintenance is almost negligible.

Big operators all over the country are using this system and are SPECIFYING

"Lubrication for the various chassis bearings to be furnished by the Myers Magazine Oiling System, providing for wick feed of oil to these bearings. The oilers for the spring-shackles and other bracketed bearings are to be incorporated in the shackles and brackets. All oilers, whether integral or attached, are to be equipped with Myers ball-valve caps for pressure filling."

Built into a chassis it costs less than a salesman's visit.

This is but one of many such cases. For unsolicited testimonials of satisfied fleet operators, manufacturers and operators get in immediate communication with us.

CHASSIS LUBRICATING COMPANY, Inc.

RAHWAY, N. J.

(Home Office)

DETROIT, MICH.

(Kresge Bldg.)

IN AGRICULTURE

(Continued from page 25)

the probability of developing a wide-spread operation of trucks. These purchasing cooperatives are combining the farmers' purchasing power. It is necessary that the farmers in each county, or other small district within the state, be grouped into a local organization so as to pool their purchases, and these local organizations are in turn grouped into a state organization so as to concentrate their purchasing power. Within the next few years, even the state organizations may be still further combined so as further to unite the purchasing power of the agriculturists.

It seems practicable that the state purchasing organization could have, and in some instances it does have, its fleet of trucks so that when a county organization gives orders for feed, fertilizer or other supplies, the state organization might profitably use some of its own trucks in delivering the same; still further economy would result if on the return of such trucks they could bring, from the county organization, livestock or other farm produce for sale in the central market. It is even more practicable for smaller fleets of trucks to be operated by the county organizations, as is successfully demonstrated in a few instances, instead of the larger fleet by the state agency. To date, however, the operation of trucks in fleets by cooperatives is very limited and ordinarily purchasing cooperatives are merely organizations for combining orders for supplies and the same are shipped from the manufacturer by railroad directly to a local point whence they are removed by the consumer who calls for the same in his own truck.

In some places, fleets of truck are successfully operated as cooperative express or freight companies among the agriculturists. In this direction lies the greatest hope for providing economical and satisfactory truck road service for the farmers. There is no good reason why such a service cannot be rendered as readily as a taxi service in the city.

Cost Records Needed

One too frequent reason for the farmers' distress is lack of scientific operation. Such operation would include the keeping of books and the use of them as a guide. Often, the farmer has produced and sold without careful calculation of cost. His purchase and use of a truck is usually no more carefully considered. An attempt on the part of the U. S. Department of Agriculture to collect statistics regarding farm truck operation reveals that accurate statistics are almost impossible to obtain, due to the fact that most farm operators of trucks keep no true account of all incidental expenses and earnings. Every farmer, before he makes such a purchase, should ascer-

tain whether a truck will be profitable or unprofitable for him and what kind will serve him best.

It is, of course, bad business for a truck dealer to sell a farmer a truck unless the same will be profitable to the farmer; it is to the interest of both the farmer and the dealer that a careful study of the farmer's needs be made before he is persuaded to buy a truck. After all farmers who would lose money by owning a truck are eliminated, there will still be left a sufficient number who can profitably own trucks to afford a wide market for them.

In this connection should be considered the argument that mechanization of the farm depresses grain prices by decreasing the demand for grain to feed horses and mules. Advocates of that argument point out that production of those animals has declined over 50 per cent since the World War; that horses and mules in the United States in 1918 consumed the crops from 15,000,000 or 20,000,000 acres of land more than that required to feed such of those animals as are now left in our country. They cite the fact that young animals can be worked a season or two and sold for more than they are worth at first; that they furnish a home consumption for crops and manure for the land; all of which the truck cannot do.

The proponents of this argument, however, overlook the facts that more cattle, hogs and sheep can be produced in the stead of the horses and mules and that such other livestock is readily marketable without decreasing the motive power on the farm. To oppose the use of trucks on farms, saying they will depress the market for feed by decreasing the number of horses and mules, is like opposing the use of oil-burners on colliers saying they will depress the market for coal. Ship-owners and farmers both need less dead-weight and more cargo. Entirely too much time and labor have been spent by farmers helping their horses and mules to get ready for, and to get through, the winter.

In the encouragement of marketing, purchasing or truck-operating cooperatives, a great and stable field for motor truck sales may be developed. These cooperatives may be so organized and operated as to furnish all year around use for trucks, usually filled both going and coming, and operated by careful and skilled drivers.

Motor Trucks a Phase of the Great Plan

In the designing and manufacture of trucks and their equipment, in the sale and use of the same, in the education of the farmer to the uses and savings of trucks, and in the development of cooperative organizations among and for the farmers, there is plenty of

romance for all the adventurous and able men who are in, or care to enter, any phase of the great industry.

The truck is the last step in rapid transit of world commerce toward the farm; the steamship, the train, the truck, place the world's products, from pole to equator, at the farmer's door.

Likewise, the trucks are the capillaries of the world's circulatory system, reaching to points inaccessible for the railroads, picking up the farmers' products and delivering them to trains and ships for distribution to all parts of the hungry world.

Trucks are an integral part and factor of the Great Plan. In bringing them toward perfection as such part and factor in the orderly manner intended by the Guiding Mind, there is supreme satisfaction to every contributor.

White Puts Out 6

(Continued from page 40)

the inner ends and are carried in double taper roller bearings, back to back, at the wheel ends.

Special gun iron is used in the brake drums which are interchangeable, front and rear. This material is also used in the hand brake drum mounted on the rear of the transmission.

All metal oil lubricated universal joints are used and in cases where a two-section shaft is necessary an additional cross-member and self-aligning center bearing is provided.

A combined pressed steel cowl, dash and instrument panel is incorporated. The gasoline tank is placed under the driver's seat and has a capacity of 16 gal. Fuel feed is by vacuum. Equipment includes fenders, running boards and aprons.

SPECIFICATIONS

Model 60

Wheelbase	.....138, 157 in.
Engine	.....6 cyl., L-head, 3½ by 4½
Carburetor	.....Zenith
Piston displacement	.....260 cu. in.
Ignition	.....Battery distributor
Control	.....Hand and automatic
Clutch	.....Plate, running in oil
Transmission	.....Own
Speeds	.....3
Mounted	.....Unit
Rear axle:	
Type	.....Semi-floating, spiral bevel
Ratios:	
Standard	.....4.72 to 1
Options	.....5.22 to 1—4.23 to 1
Steering gear	.....Nut and lever
Brakes:	
Service	.....Hydraulic, 4-wheel, 16 x 2½ in.
Hand	.....External band
Frame:	
138-in.	.....6 x 2½ x 3/16 in.
157-in.	.....6½ x 3 x 3/16 in.
Wheels	.....Cast
Tires	.....30 x 5 in.
Optional	.....32 x 6 in.
Gross weight rating	.....8000 lb.

C. G. Rowlette

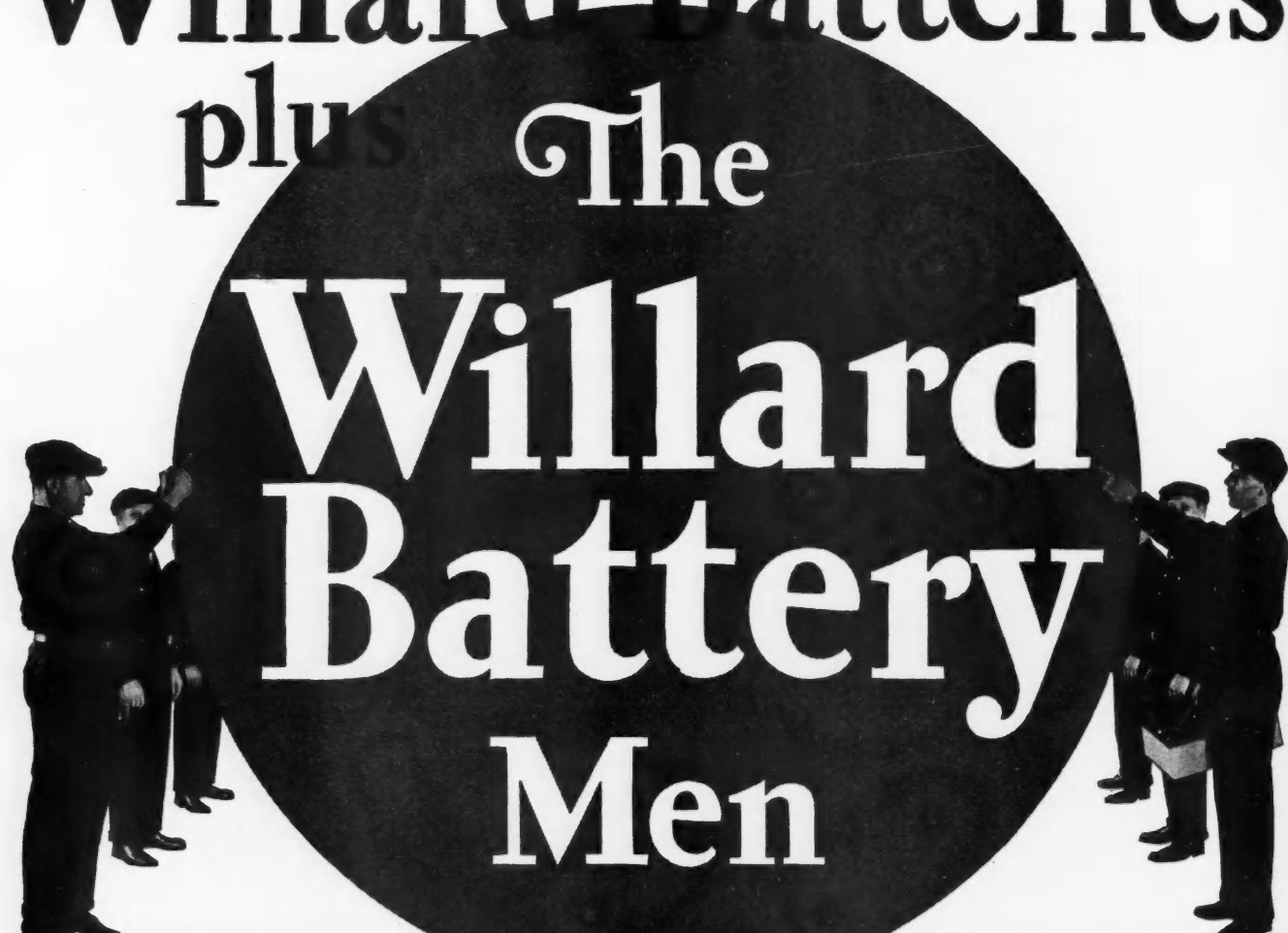
C. G. Rowlette, vice-president of the Timken Detroit Axle Co., died suddenly December 24.

FOR TODAY'S JOB IN YOUR CAR

Good roads and high speed cars have joined hands. Under their influence the owners of your cars may crowd a normal year's work for a battery into six months, or less. More driving means more starting, and today's high compression engines take more battery power each time they are started. Thus, the battery job grows.

Willard is the battery for today's job. That's why Willard equipped cars are giving owners the battery service that keeps those owners satisfied. Willards serve better and save more in the cars you make, sell or service.

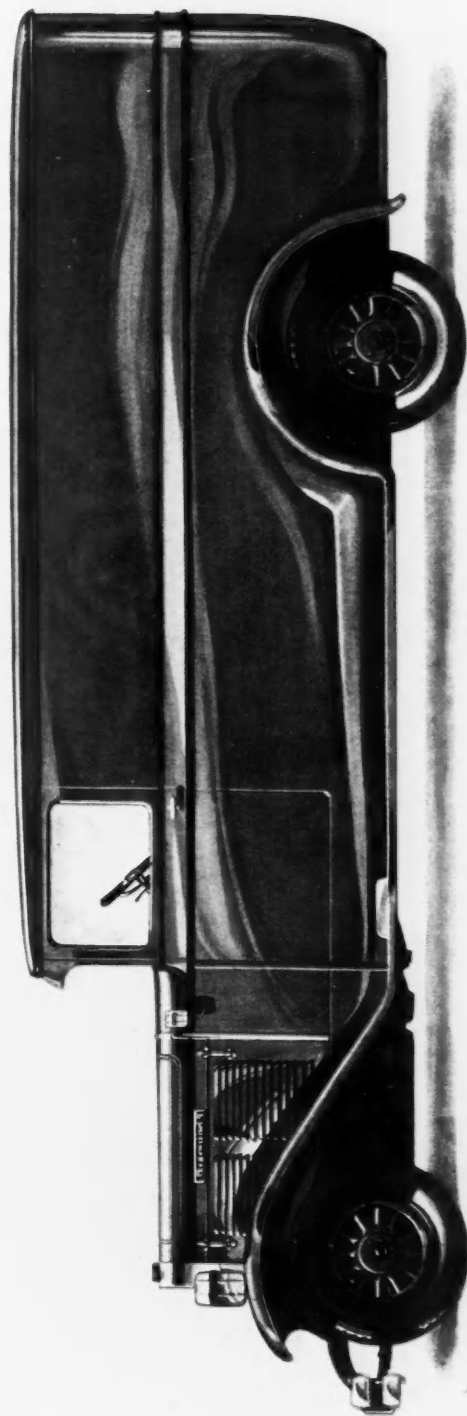
Willard Batteries plus The Willard Battery Men



DIAMOND T

SIXES

"Ambassadors of Prestige"



MODEL 151 . . . I-TON . . . \$1095 (chassis f. o. b. Chicago)

T

Once more Diamond T proves its right to leadership of the motor truck industry —proves it by *leading*, not only in style, and performance, but in downright truck engineering! Out of the motor-wisdom gained in 24 years of motor vehicle manufacture, Diamond T has created four great new Sixes, keyed in performance, in efficiency, in style, with the traffic needs of today—and tomorrow.

These four swift, safe, and sturdy Sixes possess the style that makes them con-

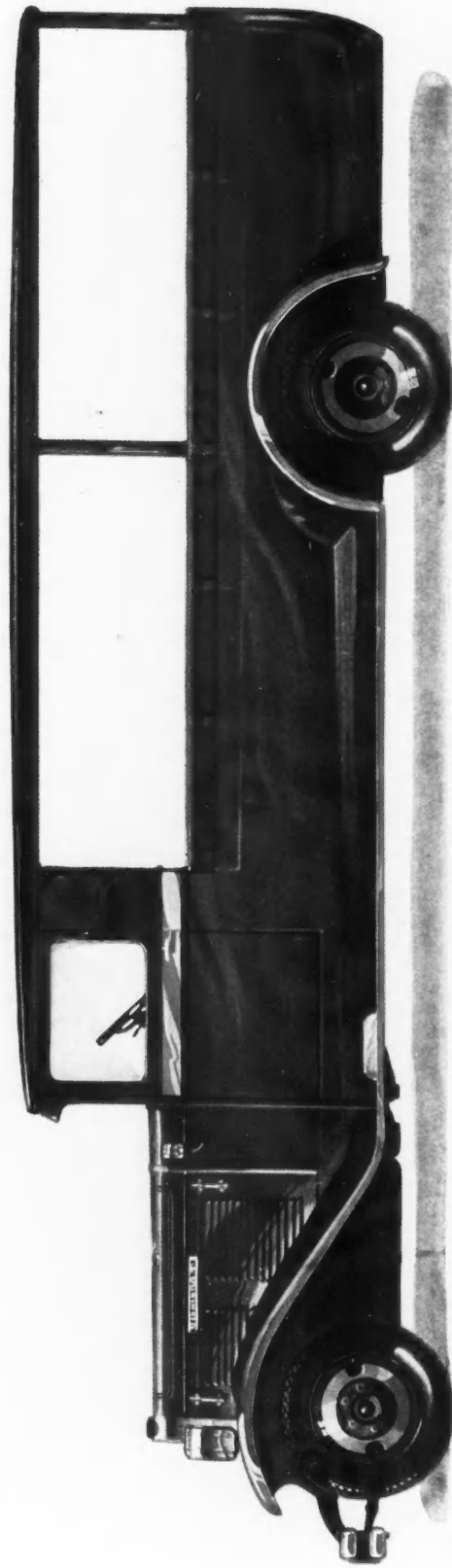
Again DIAMOND T *meets tomorrow's demands!*

spicuous wherever they go. "Ambassadors of Prestige," they advertise their

owner's reputation as they *rush* about their work. They provide a good "front"—and it pays to keep up a good front.

In the capacity range where 80% of all trucks are sold—in the price range where most operators expect to buy! American industry could easily satisfy four-fifths of its demands if no other trucks were built—these new Diamond T trucks will fill the bill of all but 20% of the nation's hauling. And in addition they have *appearance*.

"THE HANDSOMEST TRUCK IN AMERICA"



MODEL 290 . . . 1½-TON . . . \$1475 (chassis f. o. b. Chicago)

SIXES—every one! Insuring performance that meets today's need for zip and go in the nip-and-tuck of traffic, and continuous speeds with capacity loads on long hauls. Great 7-bearing motors provide reserve power at lower engine speeds which no load or speed within reason will overtax. Complete instrument panel, including motor heat indicator—comfortable full-vision cabs—and convenient controls—4-wheel Lockheed internal

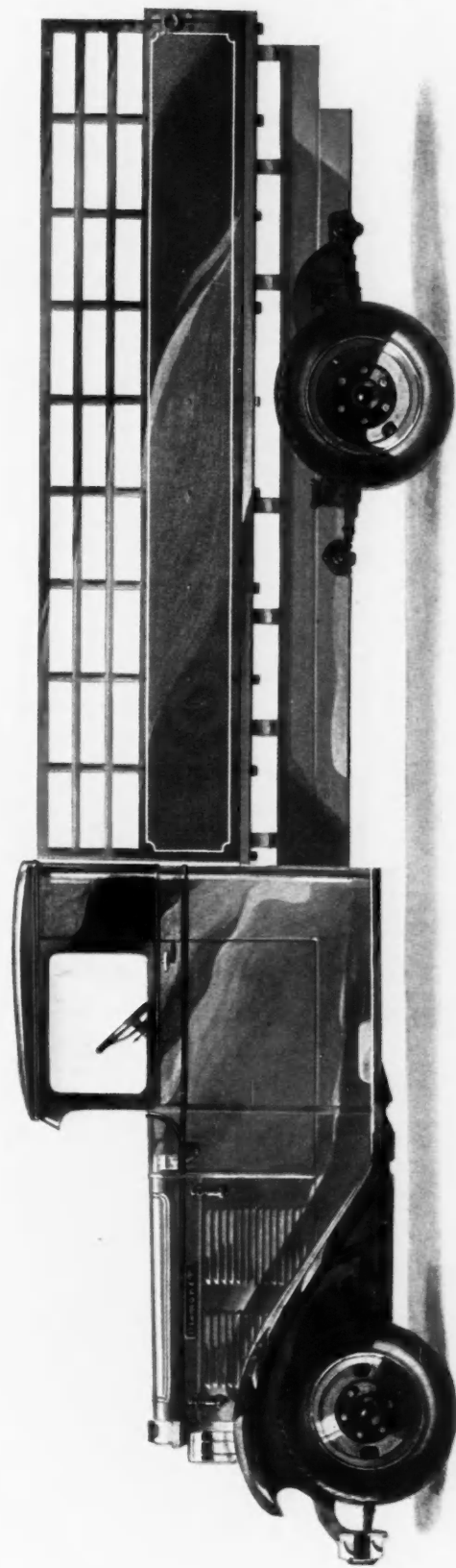
Safe and sure Good Looking and Dependable

hydraulic brakes which insure safety under all driving conditions.

Flashes of nickel—gleaming steel-sheathed bodies, finished in brilliant lacquers—ultra-modern lines—these features, and more, give these new trucks

DISTINCTION that is *valuable* to owners and operators. Truck buyers, even more than passenger car purchasers, look for value when they spend their money. They want so many ton-miles at specified speeds for a certain price. They never really expect anything free—but they spend carefully. Diamond T sales increased 55% during 1928—for the last six months this increase has been nearer 100% and is still growing!

“THE HANDSOMEST TRUCK IN AMERICA”



M O D E L 3 0 2 . . . 2 - T O N . . . \$ 1 6 5 0 (chassis f. o. b. Chicago)

The Opportunity with **DIAMOND T**

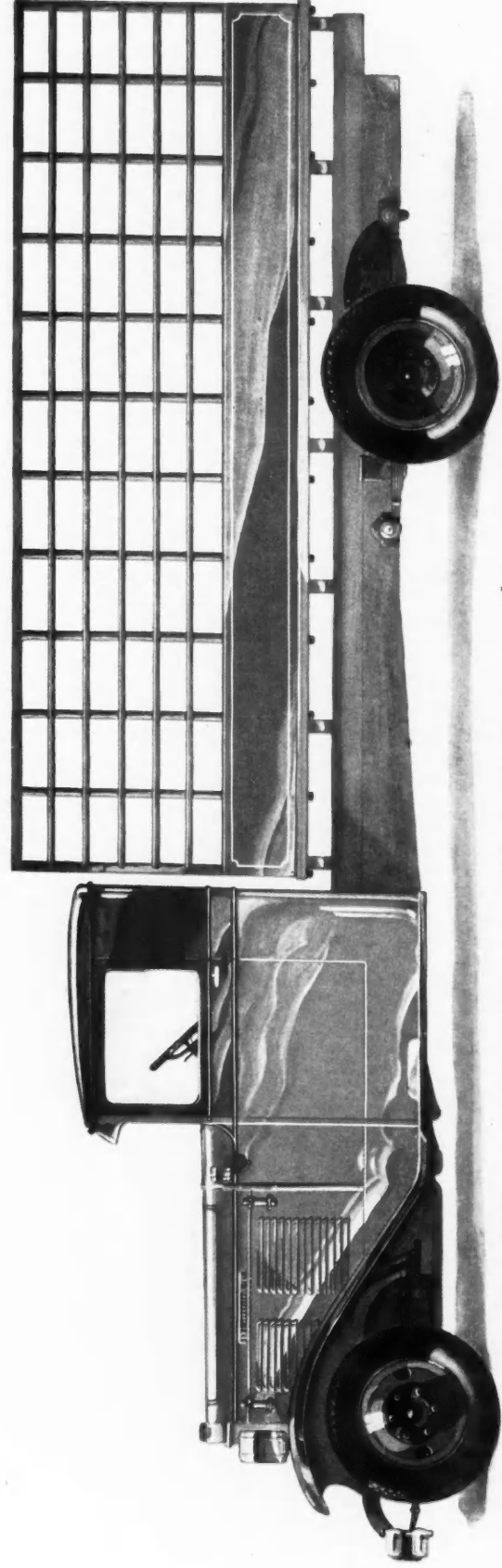
A real opportunity to make added profits! That's what the new Diamond T's offer to American motor truck dealers. Each has a great market waiting—even begging. Each offers more fine building and close pricing than was ever offered before. The Diamond T franchise in your territory may be open. Write or wire today for

details and full facts. Don't wait for some other dealer to sell Diamond T trucks to *your* prospects.

Eastern dealers—ATTENTION— See these new models at the New York Show January 5th-12th. Complete exhibit at the Diamond T Branch, William and Henry Streets, Long Island City.

Western dealers— The complete 1929 line will be on display during the Chicago Automobile Show, January 26th-February 2nd at the Chicago Branch and salesroom, 933-941 W. Washington Blvd.

‘‘THE HANDSOMEST TRUCK IN AMERICA’’



MODEL 550 . . . 2½ - TON . . . \$ 2195 (chassis f. o. b. Chicago)

DIAMOND T MOTOR CAR CO. Twenty-Sixth Street, Chicago, Ill.

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

Those Chassis Which Are Sold and Recommended for Bus Use Are Designated in the Following Table by Reference Sign (B) in Front of the Name

For Motor Bus Chassis See Pages 76 and 77

* Changes

† New Models

Key of abbreviations, page 78

(Where prices are not given it is because we have been unable to get them from authoritative sources)

Trade Name and Model	General				Engine				Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase		Chassis Weight (lbs.)			
	Chassis Price	Tire Size		Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)		Fuel System		Generator and Starter (Make)	Type and Make	Make and Model	Location			No. of Forward Speeds	Universal (Make)		Type	Total Reduction in High	Total Reduction in Low
		Maximum Wheelbase	Front (Inches)									Rear (Inches)	Carburetor (Make)													Fuel Feed
1000 Pounds																									
Chevrolet Nat. Com.	395 107	107	B 30x4.50 B 30x4.50	Own	4-31x4	21 7/8	7 H	FS	Non	Har	V V	D-R	D-R	P. Own	Own Nat.	U	3	Own	Own	4.18	13.88	75 1/2	30 1/2		
Dodge Brothers SE.	665 110	110	B 29x5.00 B 29x5.00	Dodge	6-31x4	27 3/4	7 H	PC	Non	McC	V V	N-E	N-E	P. B&B	Dodge	U	3	Spi	Own	4.45	15.23	75 1/2	30 1/2		
Dodge Brothers SEW.	675 110	110	B 31x5.25 B 31x5.25	Dodge	6-31x4	27 3/4	7 H	PC	Non	McC	V V	N-E	N-E	P. B&B	Dodge	U	3	Spi	Own	4.73	16.16	75 1/2	30 1/2		
Durand Com. Ch.	495 107	107	B 28x4.75 B 28x4.75	Con	4-31x4	18 1/2	7 L	PC	Non	Fed	Til	V V	A-L	P. Own	Own	A	3	Own	Own	4.87	16.16	75 1/2	30 1/2		
General Packard	545 110	110	B 4 7/8x20 B 4 7/8x20	Own	4-31x4	21 3/8	7 L	FP	Non	Own	Car	V V	D-R	P. Own	Own	U	3	Own	Own	4.7	16.16	75 1/2	30 1/2		
General Motors T-1L.	585 110	110	B 28x4.75 B 28x4.75	Pontiac	4-31x4	21 3/8	7 L	PC	Non	Har	Car	V V	D-R	P. Own	Own	U	3	Own	Own	4.36	14.48	75 1/2	30 1/2		
Red Speed Wagon Jr.	895 110	110	B 28x3.25 B 28x3.25	Con 16E	6-29x4 1/2	27 3/4	7 L	PC	Non	Sch	Sch	V V	D-R	P. Own	Sal	U	3	Spi	Sal	4.7	14.63	75 1/2	30 1/2		
Std. Engine 52B.	675 109	109	B 30x5 B 30x5	Con 9F	6-29x4 1/2	18 1/2	7 L	PC	Non	Lon	Sch	V V	D-R	D. Lon	W-G	U	3	Spi	Tim	5.12	15.6	75 1/2	30 1/2		
1500 Pounds																									
Dodge Brothers DE	775 120	120	B 31x5.25 B 31x5.25	Dodge	6-31x4 1/2	27 3/4	7 L	PC	Non	Fed	Sie	V V	N-E	P. B&B	Dodge	U	3	Spi	Own	4.73	10.10	75 1/2	30 1/2		
Dodge Brothers DEF	850 120	120	B 30x5 B 30x5	Dodge	6-31x4 1/2	27 3/4	7 L	PC	Non	Fed	Sie	V V	N-E	P. B&B	Dodge	U	3	Spi	Own	4.73	10.10	75 1/2	30 1/2		
Dodge Brothers DEW	790 120	120	B 30x5 B 30x5	Dodge	6-31x4 1/2	27 3/4	7 L	PC	Non	Fed	Sie	V V	N-E	P. B&B	Dodge	U	3	Spi	Own	4.73	10.10	75 1/2	30 1/2		
Fargo Clipper	725 124	124	B 5 5/8x18 B 5 5/8x18	Own XA	4-31x4 1/2	22 1/4	7 L	FP	Non	Own	Str	V V	D-R	P. B&B	Own	U	3	Own	Est 502	4.45	15.1	75 1/2	30 1/2		
Int. Harvester Spec. Del.	1170 121	121	B 30x5.25 B 30x5.25	Wau	6-29x4 1/2	19 1/8	7 L	PC	Non	Ton	Zen	V V	D-R	P. Own	B-L 20	U	3	Spi	Tim 5260H	4.9	15.1	75 1/2	30 1/2		
Kellogg	1170 121	121	B 30x5.25 B 30x5.25	Con	6-29x4 1/2	19 1/8	7 L	PC	Non	Fed	Zen	V V	D-R	P. Own	B-L 20	U	3	Spi	Tim 5260H	4.9	15.1	75 1/2	30 1/2		
Rugby Fast Mail.	725 120	120	B 29x5.00 B 29x5.00	Con 31L	6-29x4 1/2	19 1/8	7 L	PC	Non	Fed	Str	V V	D-R	D. B-L	B-L 20	U	3	Blo	Est	5.37	22.3	75 1/2	30 1/2		
Saintor S.	895 118	118	B 30x5.25 B 30x5.25	Lyce	6-29x4 1/2	24 1/4	7 L	FP	Non	Own	Str	V V	D-R	D. B-L	B-L 20	U	3	Blo	Est	5.37	22.3	75 1/2	30 1/2		
Steward Buity.	1105 112	112	B 30x5.25 B 30x5.25	Own	6-31x4 1/2	24 1/4	7 L	FP	Non	Own	Str	V V	A-L	P. B&B	Own	U	3	Cle	Own	4.9	30.0	75 1/2	30 1/2		
2 Ton																									
Acme 16.	120	120	P 30x5 P 30x5	Con 18	4-31x4 1/2	18 1/2	7 L	PC	Non	Per	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Acme 20P.	1185 132	132	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Per	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Bickman Cap	495 138	138	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Chrysler 18	130	130	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Commerce 8A.	130	130	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Day-Elmer MF	1345 131	131	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Dealy 41	128	128	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Diamond T76	132	132	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Diamond T151.	130	130	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Federal F6.	123	123	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Federal Scout.	123	123	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier Jr. Express.	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	136	136	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-30.	1485 135	135	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-30.	1485 135	135	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-30.	1485 135	135	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-30.	1485 135	135	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-30.	1485 135	135	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
Isabier 20Z	140	140	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-19	745 124 1/2	124 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L	P. B&B	W-G	U	3	Blo	Sal	6.1	18.73	90	55		
General Motors T-20.	1095 132 1/2	132 1/2	P 30x5 P 30x5	Con 18C	4-31x4 1/2	19 1/8	7 L	PC	Non	Chil	Til	V V	A-L												

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General										Engine				Electrical System		Clutch		Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model		Steering Gear (Make)		Standard Wheelbase		
Trade Name and Model		Chassis Price (Inches)	Tire Size		Rear (Inches)	Make and Model	Number of Cylinders	Bore and Stroke	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Electrical System		Type and Make	Location	No. of Forward Speeds	Universals (Make)	Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase		
			Maximum Wheelbase (Inches)	Standard Wheelbase (Inches)										Carburetor (Make)	Fuel Feed (Make)	Generator and Starter (Make)	Ignition System (Make)					Final Drive	Total Reduction in High	Total Reduction in Low	Brakes, Location			Cab to rear of frame	Cab to rear axle	Chassis Weight (lbs.) (stripped)
1 Ton—Cont'd																														
Ranley Exp.	975	128	P 30x5	P 30x5	Con 31L	6-23 1/2 x 4 1/2	18.2 L	PC	Non	Non	Non	Fed	Til	V	A-L	A-L	D-R	D-L	P. Own	Own	A	Spi	Sal	5.39	22.4	E-L	Sal	Gem	86 1/2	2510
Sanford A.	130	140	P 30x5	P 30x5	Bud HS6	6-23 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	D-L	D. B-L	B-L 20	U	Blo	Est	6.37	26.46	H-E	Est	Ros	86 1/2	2630
Service Buz.	995	126	P 30x5	P 30x5	Lyc	6-33 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	A-L	A-L	A-L	P. B-L	W-G	Mun T23N	U	Spi	Col	5.1	20.4	G	Col	Han	86 1/2	2630
Stewart Auto.	1075	140	P 30x5	P 30x5	Wau X	6-33 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
Studebaker GD-N.	1075	140	P 30x5	P 30x5	Wau X	6-33 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
United 16.	121 1/2	128 1/2	P 32x4 1/2	P 32x4 1/2	Con 20L	6-33 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
United 16C.	122 1/2	128 1/2	P 32x4 1/2	P 32x4 1/2	Bud WTU	6-33 1/2 x 4 1/2	19.8 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
U. S. U.	1850	138	P 34x5	P 34x5	Con 8R	6-33 1/2 x 4 1/2	22.5 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
Wachusett S.	152	152	P 34x5	P 34x5	Con 8R	6-33 1/2 x 4 1/2	22.5 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
White 15B.	1545	150	P 30x5	P 30x5	Own GKA	6-33 1/2 x 4 1/2	22.5 L	PC	Non	Non	Non	Fed	Str	V	D-R	D-R	D-R	P. Lon	W-G	Own	U	Spi	Col	5.57	17.1	G	Col	Han	86 1/2	2775
Willys Knight T-100.	130	130	P 30x5	P 30x5	Own	6-24 1/2 x 3 1/2	20.7 X	FP	Non	Non	Non	Own	Own	Til	V	A-L	A-L	P. B-L	W-G	Own	U	M.M.	Tim	5.36	18.6	A	Tim	Own	90 1/2	3242
1 1/4 Ton																														
Atterbury 26B.	132	132	P 30x5	P 30x5	Lyc S	6-33 1/2 x 4 1/2	25.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Biederman.	154	154	P 32x6	P 32x6	Con 8R	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway Junior.	130	130	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.	137	137	P 30x5	P 30x5	Wia F	6-33 1/2 x 4 1/2	27.3 L	PC	Non	Non	Non	Fed	Zen	G	A-L	A-L	A-L	D-L	B-L	B-L 31	U	Blo	Col	5.6	18.7	A	Shu	Gem	98 1/2	3350
Brockway JF.																														

131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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Trade Name and Model	General			Engine					Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase					
	Chassis Price	Standard Wheelbase (inches)	Maximum Wheelbase (inches)	Tire Size	Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System	Ignition System (Make)	Generator and Starter (Make)	Type and Make	Make and Model	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive	Total Reduction in High	Total Reduction in Low	Brakes, Location	
1 1/2 Ton—Cont'd																									
Wachsmuth J.	148	152	170	S 36x6	Con J4	4-3 1/2x5 1/2	22.5	L	FP	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Idi	Tim 64600D	W	7.20	38.5	* Tim 15300	Ros 3300
Wachsmuth K.	154	170	170	P 36x6	Con K4	4-4 1/2x5 1/2	27.7	L	FP	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Spi	Tim 64600D	S	7.75	41.5	* Tim 15300	Ros 3300
Willys Knight 15.	134	165	165	P 36x6	Con K4	4-4 1/2x5 1/2	20.7	L	FP	Han	G&O	Til	A-L	A-L	P. B&B	Ful DU	U	4	Spi	Tim 64600D	S	5.68	24.3	* Tim 15300	Ros 3300
Willys Knight 20A.	168	172	172	P 36x6	Con K4	4-4 1/2x5 1/2	22.5	L	FP	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Spi	Tim 64600D	S	9.25	32.1	* Tim 15300	Ros 3300
Witt-Will N.N.	2120	145 1/2	172	P 36x6	Con K4	4-4 1/2x5 1/2	28.9	L	PC	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Spi	Tim 64600D	S	7.20	30.3	* Tim 15300	Ros 3300
Witt-Will N6.	2850	144	172	P 36x6	Con K4	4-4 1/2x5 1/2	28.9	L	PC	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Spi	Tim 64600D	S	7.20	30.3	* Tim 15300	Ros 3300
World D-8.	Opt	178 1/2	178 1/2	P 36x6	Con K4	4-4 1/2x5 1/2	28.9	L	PC	Non	G&O	Zen	Boe-A	Boe-A	D. B-L	B-L 35	U	4	Spi	Tim 64600D	S	6.43	25.72	* Tim 15300	Ros 3300
1 3/4 Ton																									
Dodge Bros. ME.	1345	150	150	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. ME.	1380	150	150	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. ME.	1380	150	150	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. ME.	1415	165	165	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. LE.	1415	165	165	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. LE.	1450	165	165	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
Dodge Bros. LE.	1395	165	165	P 32x6	Dodge	6-3 1/2x5 1/2	27.3	L	PC	Han	Fed	Ste	N-E	N-E	P. B&B	Own	U	4	U-P	Own	5.67	36.83	G†	Ros 3695	
2 Ton																									
Amie 44.	150	162	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.25	33.4	* Tim 14703	Ros 4000
Amie 46.	150	162	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	7.33	39.2	* Tim 14703	Ros 4000
Amie 340.	156	162	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 346.	156	162	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L	B-L 35	U	4	Blo	Tim 63720	W	6.16	29.6	* Tim 14703	Ros 4000
Amie 40P.	2600	144	162	P 32x6	Con S4	4-4 1/2x5 1/2	28.9	L	FP	Non	G&O	Str	A-L	A-L	D. B-L</										

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*The Commercial Car Journal
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Trade Name and Model	General				Engine				Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Steering Gear (Make)	Standard Wheelbase		Chassis Weight (lbs.)									
	Chassis Price	Maximum Wheelbase (inches)	Tire Size		Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)		Fuel System		Ignition System (Make)	Generator and Starter (Make)	Type and Make	Make and Model			Location	No. of Forward Speeds		Universals (Make)	Make and Model	Final Drive	Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	Cab to rear of frame	Cab to rear axle
			Front (inches)	Rear (inches)								Carburetor	Fuel Feed																		
4 Ton—Cont'd																															
Grann 45	4735 153°	200	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grann 48	4735 153°	200	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grann 48 low bed	4735 153°	200	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grann-Bernstein 40	4735 153°	176	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1/2	7600			
Grass Premier 80-6	4650 160°	192	36x12 1/2	36x12 1/2	4-4 1/2x5 1/2	32 4 L	PC	PC	Pie	Own	Zen	V	A-L	A-L	D. Ful	Ful H	A	8 Blo	Wis 1450	Wis 1450	R	F	7.08	79.0	B*	138	83 1				

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Gasoline Tractor-Trucks

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Motor Bus Chassis Specifications

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